

<u>Claim</u>	<u>Support in the Specification</u>	<u>Support in the Priority Document (issued as U.S. Patent No. 5,840,520)</u>
25	page 20, line 33 to page 24, line 27; page 28, lines 5-8	Column 47, lines 14-22; Column 24, lines 14-27; Column 44, lines 20-32
26		Column 43, lines 18-25
27-31	Page 21, lines 29-33; Page 32, line 36 to page 33, line 4	Column 44, lines 27-32; column 47, line 23 to column 48, line 38
32, 37	Page 38, line 26 to page 40, line 32	column 47, line 23 to column 48, line 38
33	Page 40, lines 6-14	Column 48, lines 8-19
34	Page 40, lines 14-16	Column 48, lines 19-21
35	Page 40, lines 17-24	Column 48, lines 22-29
36	Page 28, lines 14-20	Column 24, lines 28-56

No new matter has been added; thus, claims 25-37 are pending in the instant application upon entry of the present amendment.

RESTRICTION REQUIREMENT

The Examiner has required restriction of the claims to one of seven inventions. In response, Applicants hereby elect, with traverse, to prosecute the claims of Group VI, drawn to vaccines comprising chimeric RSV, the genome of which comprises the reverse complement of an mRNA coding sequence operatively linked to a RSV polymerase binding site and a pharmaceutically acceptable carrier. As the new claims 25-37 are drawn to vaccines and correspond to claims 13-20 as originally filed, Applicants assert that the new claims 25-37 read on Group VI of the restriction requirement.

The Examiner has further requested an election of one of the inventions (VI-1) to (VI-6). In view of the present amendment, Applicants assert that the requirement for election of a subgroup is moot because the subject matter of the new claims cannot be divided into the six subgroups as set forth in the Office Action of November 4, 2003.

In view of the above, Applicants respectfully request entry of the above amendments and examination of claims 25-37.

No fee is believed to be required for this response. However, should any fee be due please charge the required amount to Pennie & Edmonds LLP Deposit Account No. 16-1150.

Date April 4, 2003

Respectfully submitted,

by: Geraldine F. Baldwin Reg No. 1
Geraldine F. Baldwin
PENNIE & EDMONDS LLP
1155 Avenue of the Americas
New York, New York 10036
(212) 790-9090

EXHIBIT A
CLAIMS AS THEY WILL BE PENDING IN
U.S. APPLICATION NO.: 09/923,070
UPON ENTRY OF THE PRESENT AMENDMENT

26. (new) A vaccine comprising a respiratory syncytial virus (RSV) the genome of which contains the reverse complement of an mRNA coding sequence operatively linked to a polymerase binding site of RSV, wherein the genome contains native RSV genes or regulatory sequences having specific substitutions, deletions or additions in the nucleotide sequence; and a pharmaceutically acceptable carrier.

27. (new) The vaccine of claim 25, wherein a sequence heterologous to that of native RSV comprises at least one genetic modification compared to the native RSV sequence.

28. (new) The vaccine of claim 27, wherein the genetic modification is a translocation.

29. (new) The vaccine of claim 27, wherein the genetic modification is a single nucleotide substitution.

30. (new) The vaccine of claim 27, wherein the genetic modification is an addition.

31. (new) The vaccine of claim 27, wherein the genetic modification is a deletion.

32. (new) The vaccine of claim 27, wherein the M1 gene, the N gene, the F gene, the G gene, or the L gene of RSV is modified.

33. (new) The vaccine of claim 27, wherein the F protein encoded by the RSV genome has a reduced number of lysine or arginine residues at its cleavage site.

34. (new) The vaccine of claim 27, wherein the 3' or 5' regulatory region of the RSV genome comprises a site specific modification.

35. (new) The vaccine of claim 27, wherein the N gene, the F gene or the G gene comprises a genetic modification.

36. (new) The vaccine of claim 25, wherein the virus is capable to go through only one round of replication in the host.

37. (new) The vaccine of claim 32, wherein the M1 gene, the N gene, the F gene, the G gene, or the L gene of RSV is translocated.

EXHIBIT B
MARKED-UP VERSION OF THE AMENDED PARAGRAPH ON PAGE 1
TO SHOW CHANGES MADE HEREIN

This application is a continuation of U.S. Application Serial No. 09/161,122, filed September 25, 1998, which claims priority benefit to U.S. Provisional Application Serial No. 60/069, 153, filed September 26, 1997, U.S. Provisional Application Serial No. 60/084,133 filed May 1, 1998, and U.S. Provisional Application Serial No. 60/089,207 filed June 12, 1998, and wherein U.S. Application Serial No. 09/161,122, filed September 25, 1998 also claims the right of priority under 35 U.S.C. § 120 to Application No. 08/316,439, filed September 30, 1994, now U.S. Patent No. 5,840,520, issued November 24, 1998.

Express Mail No. EL 500 575 856 US

First Class Mail ()

Date Mailed: September 5, 2002

Serial No.: 09/161,122

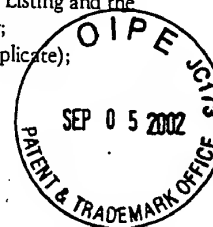
Filed: September 25, 1998

Inventor: lin et al.

For: RECOMBINANT RSV EXPRESSION SYSTEMS AND VACCINES

The stamp of the Patent Office hereon may be taken as an acknowledgment of the date stamped of the following:

- (X) Petition to Accept Unintentionally Delayed Claim for Priority under 37 C.F.R. § 1.78(a)(3) (in duplicate);
- (X) a Request to Correct Inventorship Under 37 C.F.R. § 1.48(a) (in duplicate);
- (X) Statements by Inventors to Be Added Pursuant To 37 C.F.R. § 1.48(a)(2);
- (X) a Consent by Assignee for Correction of Inventorship Pursuant to 37 C.F.R. § 1.48(a)(5) with Exhibit 1;
- (X) a Declaration for Non-Provisional Patent Application executed by Hong Jin, Roderick Tang, Shengiang Li, Martin Bryant, David Kirkwood Clarke and Peter Palese;
- (X) a Sequence Listing in paper and computer-readable form;
- (X) a Statement under 37 C.F.R. § 1.825 affirming that the Substitute Sequence Listing and the computer-readable copy thereof are the same and do not include new matter;
- (X) Petition for Extension of Time under 37 C.F.R. 1.136(a) for 4 months (in duplicate);
- (X) Amendment under 37 C.F.R. § 1.116 with Exhibits A to D;
- (X) an Amendment Fee Transmittal Form (in duplicate);
- (X) Request for Continued Examination Transmittal (in duplicate); and
- (X) Submission of formal drawings (12 sheets of 12 figures).



File No. 7682-045-999

Sender: LAC/IZB/SXM

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1155 Avenue of the Americas
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Exhibit C



Express Mail No.: EL 500 575 856 US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: JIN et al.

Application No.: 09/161,122

Group Art Unit: 1642

Filed: September 25, 1998

Examiner: Brumback, B.

For: RECOMBINANT RSV EXPRESSION
SYSTEMS AND VACCINES

Attorney Docket No.: 7682-045-999

AMENDMENT UNDER 37 C.F.R. §1.116

Assistant Commissioner for Patents
Box AF
Washington, D.C. 20231

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Sir:

In response to the outstanding Final Office Action mailed February 6, 2001, and in accordance with 37 C.F.R. §1.116, please enter the amendments and consider the remarks below intended to put the claims into condition for allowance. Applicants submit concurrently herewith: (1) Petition to Accept Unintentionally Delayed Claim for Priority under 37 C.F.R. § 1.78(a)(3) accompanied by the appropriate fee (in duplicate); (2) a Request to Correct Inventorship Under 37 C.F.R. § 1.48(a) accompanied by the appropriate fee (in duplicate); (3) Statements by Inventors to Be Added Pursuant To 37 C.F.R. § 1.48(a)(2); (4) a Consent by Assignee for Correction of Inventorship Pursuant to 37 C.F.R. § 1.48(a)(5) with Exhibit 1; (5) a Declaration for Non-Provisional Patent Application executed by Hong Jin, Roderick Tang, Shengiang Li, Martin Bryant, David Kirkwood Clarke and Peter Palese; (6) a Sequence Listing in paper and computer-readable form; (7) a Statement under 37 C.F.R. § 1.825 affirming that the Substitute Sequence Listing and the computer-readable copy thereof are the same and do not include new matter; (8) Petition for Extension of Time under 37 C.F.R. 1.136(a) for 4 months accompanied by the appropriate fee (in duplicate); (9) Exhibit

A, an Abstract as required by 37 C.F.R. 1.72(b); (10) Exhibit B a marked-up version of the amended claims wherein brackets indicates deleted matter and underlining indicates inserted matter; (11) Exhibit C, a copy of the claims which will be pending upon entry of this amendment; (12) Exhibit D, a marked-up version of the amended Specification wherein brackets indicates deleted matter and underlining indicates inserted matter; (13) an Amendment Fee Transmittal Form (in duplicate); (14) Request for Continued Examination Transmittal accompanied by the appropriate fee (in duplicate); and (15) under separate transmittal, Submission of formal drawings.

INVENTORSHIP:

Please amend inventorship of the above-captioned application to include Peter Palese and David Kirkwood Clarke.

PRIORITY:

Please amend the claim to priority in the above-identified application to read as follows: the present application claims priority under 35 U.S.C. § 120 to Application Serial No. 08/316,439, filed September 30, 1994 (now U.S. Patent No. 5,840,520); and claims priority to Application Serial No. 60/060,153, filed September 26, 1997; to Application Serial No. 60/084,153, filed May 1, 1998; and Application Serial No. 60/089,207, filed June 12, 1998.

IN THE SPECIFICATION:

Please amend the specification as follows:

On page 1, line 2, please insert the following: --The present application is entitled to and claims right of priority under 35 U.S.C. § 120 to Application No. 08/316,439, filed September 30, 1994, now U.S. Patent No. 5,840,520, issued November 24, 1998; and Application Serial No. 60/060,153, filed September 26, 1997; Application Serial No. 60/084,153, filed May 1, 1998; and Application Serial No. 60/089,207, filed June 12, 1998.--

On page 8, line 15, after 1L-5L, insert --(SEQ ID NOS:1-5)--.

On page 8, line 16, after 1T-9T, insert --(SEQ ID NOS:6-14)--.

On page 9, line 9, after genome, insert --(SEQ ID NOS:15-28)--.

On page 11, line 28, after RSV L protein, insert --(SEQ ID NO:29)--.

On page 11, line 34, after RSV L protein, insert --(SEQ ID NO:29)--.

On page 34, line 13, after AAA C, insert --(SEQ ID NO:1)--.

On page 34, line 15, after TAA CT, insert --(SEQ ID NO:2)--.

On page 34, line 16, after ACT, insert --(SEQ ID NO:3)--.

On page 34, line 18, after TTG TA, insert --(SEQ ID NO:4)--.

On page 34, line 19, after TAC, insert --(SEQ ID NO:5)--.

On page 34, line 22, after AAA TA, insert --(SEQ ID NO:6)--.

On page 34, line 24, after AAT AA, insert --(SEQ ID NO:7)--.

On page 34, line 26, after ACG AG, insert --(SEQ ID NO:8)--.

On page 34, line 28, after ATT A, insert --(SEQ ID NO:9)--.

On page 34, line 29, after ACG A, insert --(SEQ ID NO:10)--.

On page 34, line 31, after CAT AT, insert --(SEQ ID NO:11)--.

On page 34, line 33, after TGA TA, insert --(SEQ ID NO:12)--.

On page 34, line 35, after TTT TA, insert --(SEQ ID NO:13)--.

On page 34, line 36, after CTG CA, insert --(SEQ ID NO:14)--.

On page 37, line 33, after CAGC, insert --(SEQ ID NO:31)--.

On page 37, line 35, after AACA, insert --(SEQ ID NO:32)--.

On page 37, line 37, after CGGT, insert --(SEQ ID NO:33)--.

On page 38, line 2, after CAGC, insert --(SEQ ID NO:34)--.

On page 38, line 4, after AGCT, insert --(SEQ ID NO:35)--.

On page 38, line 6, after CGTTG, insert --(SEQ ID NO:36)--.

On page 38, line 8, after TGGG, insert --(SEQ ID NO:37)--.

On page 38, line 10, after AGGGTCT, insert --(SEQ ID NO:38)--.

On page 38, line 12, after ACTA, insert --(SEQ ID NO:39)--.

On page 38, line 14, after GGTA, insert --(SEQ ID NO:40)--.

On page 38, line 16, after AAG3', insert --(SEQ ID NO:41)--.

On page 51, line 2, before and, insert --(SEQ ID NO:42)--.

On page 51, line 2, after GG, insert --(SEQ ID NO:43)--.

On page 51, line 17, before and, insert --(SEQ ID NO:44)--.

On page 51, line 18, after TG, insert --(SEQ ID NO:45)--.

On page 52, line 22, after 3'), insert -- (SEQ ID NO:46)--.

On page 52, line 24, after 3'), insert --(SEQ ID NO:47)--.

On page 68, line 1 please insert the following:

--ABSTRACT

The present invention relates to genetically engineered recombinant Respiratory Syncytial Viruses and viral vectors which contain heterologous genes for use as vaccines. In accordance with the present invention, the recombinant RSV viral vectors and viruses are engineered to contain heterologous genes, including genes of other viruses, pathogens, cellular genes, tumor antigens, or to encode combinations of genes from different strains of RSV.--

IN THE SEQUENCE LISTING

Please amend the sequence listing by entering the replacement sequence listing enclosed herewith pursuant to 37 C.F.R. § 1.825.

IN THE CLAIMS:

Please amend claims 2, 13 and 18 to read as follows:

2. (Amended) An isolated infectious Respiratory Syncytial Virus (RSV) particle containing an RSV RNA comprising a binding site specific for an RNA-directed RNA polymerase operatively linked to an RSV RNA comprising sequences encoding antigenic polypeptides of both RSV-A and RSV-B.

13. (Amended) A vaccine comprising a chimeric Respiratory Syncytial Virus (RSV) the genome of which contains the reverse complement of an mRNA coding sequence operatively linked to a polymerase binding site of an RSV and a pharmaceutically acceptable carrier.

18. (Amended) The vaccine of Claim 13 in which the mRNA coding sequence encodes G and F genes of both Respiratory Syncytial Virus A and Respiratory Syncytial Virus B.

Please add new claims 25-26:

25. (new) The isolated infectious Respiratory Syncytial Virus (RSV) particle of claim 2, wherein the RSV RNA further comprises a L gene mutation.

26. (new) The isolated infectious Respiratory Syncytial Virus (RSV) particle of claim 2, wherein the RSV RNA further comprises a deletion of M2-ORF1 and/or SH-ORF2.

REMARKS

The specification is amended herein to correct technical informalities. Specifically sequence identifiers (SEQ ID NO:) have been inserted in the Brief Description of the Drawings and within the text of the specification wherever nucleotide or amino acid sequences are recited. An abstract has been inserted on the last page of the specification and a copy of the abstract is submitted herewith on a separate sheet as Exhibit A. The proper claim to priority and continuing data have been inserted on page 1, line 2 of the specification. A declaration executed by all the inventors is submitted herewith and establishes the proper priority date of the instant application.

Claims 1-24 are pending. Claims 2, 13, and 18 are under active consideration due to the restriction requirement dated November 17, 1999. Claims 2, 13 and 18 are amended herein to merely correct technical informalities and typographical errors. Claim 2 is amended herein to more particularly point out and distinctly claim that which the applicants regard as the invention. Support for the amendments made herein can be found in the specification page 5, lines 30-37, page 6, lines 1-18, page 7, lines 1-7, and page 15, lines 10-18. Support for claims 2, 3 and 18 can also be found in application Serial No. 08/316,439, filed September 30, 1994, now U.S. Patent No. 5,840,520 which issued on November 24, 1998 on page 10, lines 1-9; page 22, lines 19-27; page 36, lines 19-30; and page 66, line 19 to page 77, line 20.

New claims 25 and 26 have been added to more particularly point out and distinctly claim that which the applicants regard as the invention. Support for new claims 25 and 26 can be found at page 55, line 1 through page 63, line 36 of the instant specification.

A Request to Correct Inventorship under 37 C.F.R. § 1.48 and a Petition to Accept Unintentionally Delayed Claim for Priority under 37 C.F.R. § 1.78(a)(3) are being filed concurrently herewith under separate transmittal.

1. The Rejections under 35 U.S.C. § 102 are obviated by the amendment made herein and should therefore be withdrawn

Claims 2, 13, and 18 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Collins et al. (WO97/12032). This rejection is in error and should be withdrawn. The priority date of the instant application, as amended herein, is September 30, 1994 and thus predates the Collins reference of 1997. Thus, Collins et al. (WO97/12032) is not available as art to the instant application and the applicants respectfully submit that the rejection under 35 U.S.C. § 102(b) should be withdrawn.

Claims 2, 13, and 18 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Collins et al., 1995, Proc. Natl. Acad. Sci. 92:11563. This rejection is in error and should be withdrawn. The priority date of the instant application, as amended herein, is September 30, 1994 and thus predates the Collins reference of 1995. Thus, Collins et al., 1995, Proc. Natl. Acad. Sci. 92:11563 is not available as art to the instant application and the applicants respectfully submit that the rejection under 35 U.S.C. § 102(b) should be withdrawn.

2. The Rejection under 35 U.S.C. § 103 is obviated by the amendment made herein and should therefore be withdrawn

Claim 18 stands rejected under 35 U.S.C. § 103(a) as being obvious in light of Collins et al., 1995, Proc. Natl. Acad. Sci. 92:11563. This rejection is in error and should be withdrawn. The priority date of the instant application, as amended herein, is September 30, 1994 and thus predates the Collins reference of 1995. Thus, Collins et al., 1995, Proc. Natl. Acad. Sci. 92:11563 is not available as art to the instant application and the applicants respectfully submit that the rejection under 35 U.S.C. § 103(a) should be withdrawn.

CONCLUSION

Applicants respectfully request entry and consideration of the foregoing amendments and remarks. No new matter has been introduced. The claims are believed to be free of the art and patentable. Withdrawal of all the rejections and an allowance are earnestly sought.

Respectfully submitted,

by *Jacqueline Benn*
Reg. No. 43,492

Date September 5, 2002

Laura A. Coruzzi 30,742

Laura A. Coruzzi

(Reg. No.)

PENNIE & EDMONDS LLP

1155 Avenue of the Americas

New York, New York 10036-2711

(212) 790-9090

EXHIBIT A
ABSTRACT
FILED September 5, 2002
IN U.S. PATENT APPLICATION SERIAL NO. 09/161,122
ATTORNEY DOCKET NO. 7682-045-999

ABSTRACT

The present invention relates to genetically engineered recombinant Respiratory Syncytial Viruses and viral vectors which contain heterologous genes for use as vaccines. In accordance with the present invention, the recombinant RSV viral vectors and viruses are engineered to contain heterologous genes, including genes of other viruses, pathogens, cellular genes, tumor antigens, or to encode combinations of genes from different strains of RSV.

EXHIBIT B
A MARKED UP VERSION OF THE
CLAIMS AMENDED IN THE INSTANT AMENDMENT
FILED September 5, 2002
IN U.S. PATENT APPLICATION SERIAL NO. 09/161,122
ATTORNEY DOCKET NO. 7682-045-999

2. (amended) An isolated infectious Respiratory Syncytial Virus (RSV) [RSV] particle containing an RSV RNA comprising a binding site specific for an RNA-directed RNA polymerase operatively linked to an RSV RNA comprising sequences [which comprises a chimeric RSV antigenome or genome] encoding antigenic polypeptides of both RSV-A and RSV-B.

13. (amended) A vaccine comprising a chimeric Respiratory Syncytial Virus (RSV) [RSV] the genome of which contains the reverse complement of an mRNA coding sequence operatively linked to a polymerase binding site of an RSV and a pharmaceutically acceptable carrier.

18. (amended) The vaccine of Claim 13 in which the mRNA coding sequence encodes G and F genes of both Respiratory Syncytial Virus [RSV] A and Respiratory Syncytial Virus B.

EXHIBIT C
**CLAIMS THAT WILL BE PENDING UPON ENTRY OF THE INSTANT
AMENDMENT**

FILED September 5, 2002
IN U.S. PATENT APPLICATION SERIAL NO. 09/161,122
ATTORNEY DOCKET NO. 7682-045-999

2. (amended) An isolated infectious Respiratory Syncytial Virus (RSV) particle containing an RSV RNA comprising a binding site specific for an RNA-directed RNA polymerase operatively linked to an RSV RNA comprising sequences encoding antigenic polypeptides of both RSV-A and RSV-B.
13. (amended) A vaccine comprising a chimeric Respiratory Syncytial Virus (RSV) the genome of which contains the reverse complement of an mRNA coding sequence operatively linked to a polymerase binding site of an RSV and a pharmaceutically acceptable carrier.
18. (amended) The vaccine of Claim 13 in which the mRNA coding sequence encodes G and F genes of both Respiratory Syncytial Virus A and Respiratory Syncytial Virus B.
25. (new) The isolated infectious Respiratory Syncytial Virus (RSV) particle of claim 2, wherein the RSV RNA further comprises a L gene mutation.
26. (new) The isolated infectious Respiratory Syncytial Virus (RSV) particle of claim 2, wherein the RSV RNA further comprises a deletion of M2-ORF1 and/or SH-ORF2.

EXHIBIT D
A MARKED UP VERSION OF PARAGRAPHS IN THE
SPECIFICATION AMENDED IN THE INSTANT AMENDMENT
FILED September 5, 2002
IN U.S. PATENT APPLICATION SERIAL NO. 09/161,122
ATTORNEY DOCKET NO. 7682-045-999

On page 1, line 2 please insert the following paragraph:

The present application is entitled to and claims right of priority under 35 U.S.C. § 120 to Application No. 08/316,439, filed September 30, 1994, now U.S. Patent No. 5,840,520, issued November 24, 1998; and Application Serial No. 60/060,153, filed September 26, 1997; to Application Serial No. 60/084,153, filed May 1, 1998; and Application Serial No. 60/089,207, filed June 12, 1998.

EXPRESS MAIL NO.: EL 500 575 856 US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: JIN et al.

Serial No.: 09/161,122

Group Art Unit: 1642

Filed: September 25, 1998

Examiner: Brumback, B.

For: RECOMBINANT RSV EXPRESSION
SYSTEMS AND VACCINES

Attorney Docket No.: 7682-045-999

**PETITION TO ACCEPT UNINTENTIONALLY
DELAYED CLAIM FOR PRIORITY UNDER 37 C.F.R. § 1.78(a)(3)**

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Pursuant to 37 C.F.R. § 1.78(a)(3), Applicants hereby petition the Commissioner to accept the unintentionally delayed claim for priority. Applicants submit an amendment under 37 C.F.R. § 1.116 concurrently herewith.

The delay in claiming priority was unintentional. In particular, inventors David Kirkwood Clarke and Peter Palese who are the only inventors on the prior application have inadvertently been omitted from the above-identified application. A request to correct inventorship under 37 C.F.R. § 1.48(a) is concurrently herewith. Applicants note that the delay in claiming priority was caused by the lack of co-inventorship between the prior application and the above-identified application. The lack of co-inventorship occurred in error as the inventors David Kirkwood Clarke and Peter Palese who are the only inventors on the prior application were inadvertently omitted from the above-identified application.

Applicants hereby submit the fee of \$1,280.00 set forth in 37 C.F.R. § 1.17(t). Please charge the required surcharge to Pennie & Edmonds LLP Deposit Account No. 16-1150. The

Commissioner is hereby authorized to charge any deficiency of any fee, or surcharge, or other payment to Pennie & Edmonds LLP Deposit Account No. 16-1150.

The Petitioners request that the unintentionally delayed claim for priority be entered in the instant application.

Respectfully submitted,

by: *Jacqueline Benn*

Laura A. Coruzzi

Reg No. 43,492

30,742

Laura A. Coruzzi

(Reg. No.)

PENNIE & EDMONDS LLP

1155 Avenue of the Americas

New York, NY 10036-2711

Telephone: (212) 790-9090

Date: September 5, 2002

Enclosures



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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Application of: JIN et al.

APR 14 2003

Serial No.: 09/161,122

Group Art Unit: 1642

TECH CENTER 1600/2900

Filed: September 25, 1998

Examiner: Brumback, B.

For: RECOMBINANT RSV EXPRESSION
SYSTEMS AND VACCINES

Attorney Docket No.: 7682-045-999

REQUEST TO CORRECT INVENTORSHIP UNDER 37 C.F.R. § 1.48 (a)

Assistant Commissioner for Patents
U.S. Patent and Trademark Office
P.O. Box 2327
Arlington, VA 22202

SIR:

It is respectfully requested that the inventorship of the above-identified patent application be corrected under 37 C.F.R. § 1.48(a) to further include the name of David Kirkwood Clarke, whose residence is 3205 Whispering Hills, Chester, New York 10918, and Peter Palese, whose residence is 414 Highwood Avenue, Leonia, New Jersey 07065, as co-inventors of the claims in the instant patent application. Applicants concurrently submit herewith (1) a Statement in Support of Correction of Inventorship; (2) an executed Declaration by the actual inventors; and (3) a Consent by Assignee to Correction of Inventorship.

The name of David Kirkwood Clarke and Peter Palese were omitted in the instant patent application through error and without any deceptive intention on the part of the omitted inventor. Thus, the inventorship of the claims in the instant patent application should be corrected to include the names of David Kirkwood Clarke and Peter Palese.

Pursuant to 37 C.F.R. § 1.48(a) and § 1.17(i), it is believed that a fee of \$130.00 is due for submission of this request. Please charge the required fee to Pennie and Edmonds LLP Deposit Account Number 16-1150; a duplicate of this sheet is enclosed.

Respectfully submitted,

by *Jacqueline Benn*

Laura A. Coruzzi Reg No. 43,492
30,742

Laura A. Coruzzi

(Reg. No.)

PENNIE & EDMONDS LLP

1155 Avenue of the Americas

New York, NY 10036-2711

Telephone: (212) 790-9090

Date: September 5, 2002

Enclosures



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Application of: Jin et al.

Serial No.: 09/161,122

Group Art Unit: 1642

Filed: September 25, 1998

Examiner: Brumback, B.

For: RECOMBINANT RSV EXPRESSION
SYSTEMS AND VACCINES

Attorney Docket No.: 7682-045-999

**STATEMENT BY THE INVENTOR TO BE ADDED
PURSUANT TO 37 C.F.R. §1.48 (a)(2)**

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

I, Peter M. Palese, have reviewed and understand the content of the Petition for Correction of Inventorship Under 37 C.F.R. §1.48(a) submitted concurrently herewith to amend the above-identified application to correctly name all of the inventors. I hereby state that my name was inadvertently omitted, without deceptive intent, as a co-inventor of the currently claimed subject matter of the above-identified patent application. There was no deceptive intent on my part in the omission of my name as a co-inventor.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true and further that I make these statements with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under §1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

8/29/02

Date

Peter M. Palese



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

RECEIVED

APR 14 2003

Application of: Jin et al.

TECH CENTER 1600/2900

Serial No.: 09/161,122

Group Art Unit: 1642

Filed: September 25, 1998

Examiner: Brumback, B.

For: RECOMBINANT RSV EXPRESSION
SYSTEMS AND VACCINES

Attorney Docket No.: 7682-045-999

**STATEMENT BY THE INVENTOR TO BE ADDED
PURSUANT TO 37 C.F.R. §1.48 (a)(2)**

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

I, David Kirkwood Clarke, have reviewed and understand the content of the Petition for Correction of Inventorship Under 37 C.F.R. §1.48(a) submitted concurrently herewith to amend the above-identified application to correctly name all of the inventors. I hereby state that my name was inadvertently omitted, without deceptive intent, as a co-inventor of the currently claimed subject matter of the above-identified patent application. There was no deceptive intent on my part in the omission of my name as a co-inventor.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true and further that I make these statements with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under §1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

8.22.02

Date

David K. Clarke

David Kirkwood Clarke



RECEIVED

APR 14 2003

TECH CENTER 1600/2900

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: JIN et al.

Serial No.: 09/161,122

Group Art Unit: 1642

Filed: September 25, 1998

Examiner: Brumback, B.

For: RECOMBINANT RSV EXPRESSION
SYSTEMS AND VACCINES

Attorney Docket No.: 7682-045-999

**CONSENT BY ASSIGNEE FOR CORRECTION OF
INVENTORSHIP PURSUANT TO 37 C.F.R. § 1.48(a)(5)**

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

MEDIMMUNE VACCINES, Inc., having an office for transaction of business at 297 North Bernardo Avenue, Mountain View, California 94043, as an assignee of right, title and interest in, to and under the invention and U.S. patent application Serial No. 09/161,122, filed September 25, 1998, entitled "RECOMBINANT RSV EXPRESSION SYSTEMS AND VACCINES", hereby consents to amendment of the application to name the following actual inventors: Hong Jin, Roderick Tang, Shengqiang Li, Martin Bryant, David Clarke, and Peter Palese.

An Assignment of the application to AVIRON, Inc. executed by Hong Jin, Roderick Tang, Shengqiang Li, and Martin Bryant was recorded with the U.S. Patent & Trademark Office on April 16, 2001, on Reel 011706 at frame 0529. Attached hereto as Exhibit 1 is a Certificate of Amendment to Amended and Restated Certificate of Incorporation certifying that the name of the corporation previously known as AVIRON, Inc. has been amended to MEDIMMUNE VACCINES, Inc.

The undersigned is empowered to act on behalf of the assignee.

I hereby declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and

further, that these statements are made with the knowledge that willful false statements, and the like so made, are punishable by fine or imprisonment, or both, under Section 1001, Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: 9/3/02

Timothy R. Pearson
Signature

Timothy R. Pearson
Name of Signatory on behalf of
MEDIMMUNE VACCINES, Inc.

Vice President, Treasurer & Secretary
Title of Signatory

Delaware

PAGE 1

The First State

I, HARRIET SMITH WINDSOR, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF AMENDMENT OF "AVIRON", CHANGING ITS NAME FROM "AVIRON" TO "MEDIMUNE VACCINES, INC.", FILED IN THIS OFFICE ON THE TENTH DAY OF APRIL, A.D. 2002, AT 11 O'CLOCK A.M.

A FILED COPY OF THIS CERTIFICATE HAS BEEN FORWARDED TO THE NEW CASTLE COUNTY RECORDER OF DEEDS.



Harriet Smith Windsor
Harriet Smith Windsor, Secretary of State

2600915 8100

AUTHENTICATION: 1712941

020228733

DATE: 04-10-02

APR 10 2002 12:46

302 655 5049

PAGE.02

STATE OF DELAWARE
SECRETARY OF STATE
DIVISION OF CORPORATIONS
FILED 11:00 AM 04/10/2002
020228733 - 2600915

AVIRON**CERTIFICATE OF AMENDMENT TO AMENDED
AND RESTATED CERTIFICATE OF INCORPORATION**

AVIRON, a corporation organized and existing under the laws of the State of Delaware (the "Corporation"), hereby certifies as follows:

1. The Board of Directors of the Corporation, acting by the Written Consent of its Sole Director, duly adopted, pursuant to Section 242 of the General Corporation Law of the State of Delaware (the "GCL"), resolutions setting forth this proposed Amendment to the Amended and Restated Certificate of Incorporation of said Corporation and declaring said Amendment to be advisable and directing that such Amendment be presented to the sole stockholder of the Corporation for consideration and approval:

2. The stockholder of the Corporation, acting by the Written Consent of its Sole Stockholder, approved and adopted this proposed Amendment to the Restated Certificate of Incorporation of said Corporation in accordance with Section 242 of the GCL:

3. Article 1 of the Amended and Restated Certificate of Incorporation of the Corporation, dated January 15, 2002, is hereby amended to read in full as follows:

"The name of the Corporation is: MediImmune Vaccines, Inc."

FROM CORPORATION TRUST 302-655 00

(WED) 4.10.02 11:47

47, NO. 4862069309 P 4

IN WITNESS WHEREOF, AVIRON has caused this Certificate to be signed by
David M. Mott, Chief Executive Officer, this day 10 of April 2002.

AVIRON

By: 

David M. Mott
Chief Executive Officer

NY-4094013

Delaware

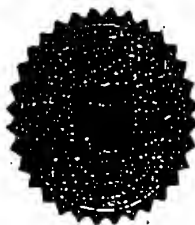
PAGE 1

The First State

I, HARRIET SMITH WINDSOR, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF OWNERSHIP OF "AVIRON", FILED IN THIS OFFICE ON THE FIFTEENTH DAY OF JANUARY, A.D. 2002, AT 4 O'CLOCK P.M.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL REPORTS HAVE BEEN FILED TO DATE.

AND I DO HEREBY FURTHER CERTIFY THAT THE FRANCHISE TAXES HAVE BEEN PAID TO DATE.



Harriet Smith Windsor
Harriet Smith Windsor, Secretary of State

2600915 8100

020188821

AUTHENTICATION: 1681841

DATE: 03-21-02

JAN-14-2002 13:21

MedImmune, Inc.

STATE OF DELAWARE
SECRETARY OF STATE
DIVISION OF CORPORATIONS
FILED 04:00 PM 01/15/2002
020023084 - 2600915

CERTIFICATE OF OWNERSHIP AND MERGER

OF

APPLE MERGER CORP.

WITH AND INTO

AVIRON

Under Section 253
of the Delaware General Corporation Law

Apple Merger Corp., a Delaware corporation (the "Corporation"), hereby certifies as follows:

FIRST: The Corporation was incorporated on November 29, 2001, pursuant to the Delaware General Corporation Law (the "DGCL").

SECOND: The Corporation is the owner of at least ninety percent of the outstanding shares of common stock of Aviron. The shares of common stock constitute the only outstanding shares of capital stock of Aviron.

THIRD: The following is a copy of the resolutions duly adopted as of January 15th, 2002 by the Written Consent of the Board of Directors of the Corporation with respect to the merger of the Corporation with and into Aviron:

"RESOLVED, that the Corporation be merged (the "Merger") with and into Aviron, with Aviron as the surviving corporation, on the terms and subject to the conditions set forth in the Agreement and Plan of Merger (the "Merger Agreement") dated as of December 2, 2001 among MedImmune, Inc. ("Parent"), the Corporation and Aviron, and the Merger is hereby approved; and further

RESOLVED, that at the effective time of the Merger:

1. Each issued and outstanding share of capital stock of the Corporation shall be converted into and become one validly issued, fully paid and nonassessable share of common stock of Aviron, as the surviving corporation.

2. Each share of common stock (the "Shares") of Aviron that is owned by Parent, the Corporation or Aviron shall

JAN-14-2002 13:21

MedImmune, Inc.

381 527 4287 P.03/04

automatically be canceled and retired and shall cease to exist, and no consideration shall be delivered in exchange therefor.

3. Each issued and outstanding Share (other than any shares to be canceled in accordance with 2, above, and other than Shares held by stockholders who perfect appraisal rights under Delaware law) shall be converted into the right to receive 1.075 validly issued, fully paid and nonassessable shares of common stock (the "Parent Shares") of Parent. Notwithstanding the foregoing, each holder of Shares exchanged pursuant to the Merger who would otherwise have been entitled to receive a fraction of a Parent Share (after taking into account all certificates representing Shares delivered by such holder) shall receive, in lieu thereof, cash (without interest) in an amount equal to such fractional part of a Parent Share multiplied by the closing price for a Parent Share as reported in the New York City edition of The Wall Street Journal (or, if not reported thereby, any other authoritative source) on the date prior to the date of the Merger.

FOURTH: The Merger has been approved by MedImmune, Inc., the sole stockholder of the Corporation, by written consent in lieu of a meeting pursuant to Section 228 of the DGCL.


JAN-14-2002 13:22

MedImmune, Inc.

381 527 4287 P.04/04

IN WITNESS WHEREOF, the undersigned has duly executed this
Certificate of Ownership and Merger this 5th day of January, 2002.

APPLE MERGER CORP.

By: 
Name: David M. Mott
Title: Chief Executive Officer

Delaware

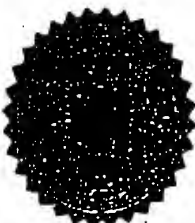
PAGE 1

The First State

I, HARRIET SMITH WINDSOR, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE RESTATED CERTIFICATE OF "AVIRON", FILED IN THIS OFFICE ON THE FIFTEENTH DAY OF JANUARY, A.D. 2002, AT 4:01 O'CLOCK P.M.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL REPORTS HAVE BEEN FILED TO DATE.

AND I DO HEREBY FURTHER CERTIFY THAT THE FRANCHISE TAXES HAVE BEEN PAID TO DATE.



Harriet Smith Windsor
Harriet Smith Windsor, Secretary of State

2600915 8100

020188822

AUTHENTICATION: 1681842

DATE: 03-21-02

JAN 14 2002 10:19 AM FR

STATE OF DELAWARE
TO S SECRETARY OF STATE P. 02
DIVISION OF CORPORATIONS
FILED 04:01 PM 01/15/2002
020028094 - 2600915

**AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION
OF
AVIRON**

Pursuant to Sections 242 and 245 of the
General Corporation Law of the State of Delaware

Aviron, a corporation organized and existing under the laws of the State of Delaware (the "Corporation"), hereby certifies as follows:

FIRST: The original Certificate of Incorporation of the Corporation was filed with the Secretary of State of the State of Delaware on March 7, 1996 under the name Aviron Merger Corporation. The Corporation filed an Amended and Restated Certificate of Incorporation on July 16, 1996; an Amended and Restated Certificate of Incorporation on November 22, 1996; and a Certificate of Amendment of the Amended and Restated Certificate of Incorporation on July 10, 2000.

SECOND: The Amended and Restated Certificate of Incorporation has been duly adopted in accordance with Sections 242 and 245 of the General Corporation Law of the State of Delaware by the director and the stockholder of the Corporation.

THIRD: The Certificate of Incorporation, as amended and restated, is hereby amended and restated to read in its entirety as follows.

ARTICLE I

The name of the Corporation is: Aviron

ARTICLE II

The address of the registered office of the Corporation in the State of Delaware is The Corporation Trust Company, Corporation Trust Center, 1209 Orange Street, in the City of Wilmington, County of New Castle 19801. The name of the Corporation's registered agent at such address is The Corporation Trust Company.

ARTICLE III

The purpose for which the Corporation is organized is to engage in any lawful acts or activities for which corporations may be organized under the General Corporation Law of the State of Delaware.

JAN 14 2002 18:28 AM FR

TO 9057284669368413 P.03

ARTICLE IV

The total number of shares of stock which the Corporation shall have authority to issue is one hundred shares of common stock, par value \$.01, per share.

ARTICLE V

Elections of directors need not be by ballot unless required by the by-laws of the Corporation. Any director may be removed from office either with or without cause at any time by the affirmative vote of the holders of a majority of the outstanding stock of the Corporation entitled to vote, given at a meeting of the stockholders called for that purpose, or by the consent of the holders of a majority of the outstanding stock of the Corporation entitled to vote, given in accordance with Section 228 of the General Corporation Law of the State of Delaware.

ARTICLE VI

In furtherance and not in limitation of the power conferred upon the Board of Directors by law, the Board of Directors shall have power to make, adopt, alter, amend and repeal from time to time the by-laws of the Corporation, subject to the right of the stockholders entitled to vote with respect thereto to alter, amend and repeal by-laws adopted by the Board of Directors.

ARTICLE VII

No director shall be liable to the Corporation or any of its stockholders for monetary damages for breach of fiduciary duty as a director, provided that the foregoing shall not eliminate or limit any liability that may exist with respect to (1) a breach of the director's duty of loyalty to the Corporation or its stockholders, (2) acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (3) liability under Section 174 of the Delaware General Corporation Law or (4) a transaction from which the director derived an improper personal benefit, it being the intention of the foregoing provision to eliminate the liability of the Corporation's directors to the Corporation or its stockholders to the fullest extent permitted by Section 102(b)(7) of the Delaware General Corporation Law, as in effect on the date hereof and as such Section may be amended after the date hereof to the extent such amendment permits such liability to be further eliminated or limited. The Corporation shall indemnify to the fullest extent permitted by Section 145 of the Delaware General Corporation Law (as in effect on the date hereof and as such Section may be amended after the date hereof) each person that such Section grants the Corporation the power to indemnify.

FROM CORPORATION TRUST WILM. TEA

(THU) 3. 21 '02 21:17. S. NO. 4863796:22 P 9

JAN 14 2002 10:28 AM FR

TO 9057284669368413 P.04

IN WITNESS WHEREOF, Aviron has caused this certificate to be executed by its authorized officer, on this 3rd day of January, 2002.

AVIRON

By:



Name: Charlene A. Friedman

Title: Vice President, General Counsel
and Secretary



Express Mail No.: EL 500 575 856 US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

RECEIVED

APR 14 2003

Application of: JIN et al.

Serial No.: 09/161,122

Group Art Unit: 1642

TECH CENTER 1600/2300

Filed: September 25, 1998

Examiner: Brumbach, B.

For: RECOMBINANT RSV EXPRESSION
SYSTEMS AND VACCINES

Attorney Docket No.: 7682-045-999

STATEMENT UNDER 37 C.F.R. §§ 1.825(a) AND 1.825(b)

Assistant Commissioner for Patents
Washington, D.C. 20231

S I R:

Applicants submit herewith copies of the Substitute Sequence Listing in paper and computer-readable forms.

Applicants submit herewith a statement that the paper and computer-readable copies of the Substitute Sequence Listing, submitted in accordance with 37 C.F.R. § 1.825 on even date herewith, are the same. Applicants further submit herewith a statement that the paper and computer-readable copies of the Substitute Sequence Listing, submitted in accordance with 37 C.F.R. § 1.825 on even date herewith, do not include new matter. Accordingly, Applicants respectfully request that the Substitute Sequence Listing be entered in the instant application.

Date September 5, 2002

Respectfully submitted,

by *Jaqueline Benn*
Laura A. Coruzzi Reg. No. 43,492
30,742
Laura A. Coruzzi (Reg. No.)

PENNIE & EDMONDS LLP
1155 Avenue of the Americas
New York, New York 10036-2711
(212) 790-9090



Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

REQUEST FOR CONTINUED EXAMINATION (RCE) TRANSMITTAL

Subsection (b) of 35 U.S.C. § 132, effective on May 29, 2000,
provides for continued examination of an utility or plant application
filed on or after June 8, 1995.

See The American Inventors Protection Act of 1999 (AIPA).

Express Mail No.	EL 500 575 856 US
Application Number	09/161,122
Filing Date	September 25, 1998
First Named Inventor	JIN, H.
Group Art Unit	1642
Examiner Name	Brumback, B.
Attorney Docket Number	7682-045-999

RECEIVED

APR 14 2003

TECH CENTER 1600/2900

This is a Request for Continued Examination (RCE) under 37 C.F.R. § 1.114 of the above-identified application.

NOTE: 37 C.F.R. § 1.114 is effective on May 29, 2000. If the above-identified application was filed prior to May 29, 2000, applicant may wish to consider filing a continued prosecution application (CPA) under 37 C.F.R. § 1.53 (d) (PTO/SB/29) instead of a RCE to be eligible for the patent term adjustment provisions of the AIPA. See Changes to Application Examination and Provisional Application Practice, Interim Rule, 65 Fed. Reg. 14865 (Mar. 20, 2000), 1233 Off. Gaz. Pat. Office 47 (Apr. 11, 2000), which established RCE practice.

1. Submission required under 37 C.F.R. § 1.114

- a. ☐ Previously submitted
- i. ☐ Consider the amendment(s)/reply under 37 C.F.R. § 1.116 previously filed on ____
(Any unentered amendment(s) referred to above will be entered).
- ii. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on ____
- iii. ☐ Other ____
- b. ☒ Enclosed
- i. ☒ Amendment/Reply
- ii. ☐ Affidavit(s)/Declaration(s)
- iii. ☐ Information Disclosure Statement (IDS)
- iv. ☒ Other Petition for Extension of Time for 4 months; Petition to Accept Unintentionally Delayed Claim for Priority under 37 C.F.R. 1.78(a)(3); Request to Correct Inventorship under 37 C.F.R. 1.48(a); Submission of Substitute Sequence Listing; Submission of Formal Drawings

2. Miscellaneous

- ☐ Suspension of action on the above-identified application is requested under 37 C.F.R. § 1.103(c) for a period of ____ months. (Period of suspension shall not exceed 3 months; Fee under 37 C.F.R. § 1.17(i) required)
- b. ☐ Other ____

3. Fees The RCE fee under 37 C.F.R. § 1.17(e) is required by 37 C.F.R. § 1.114 when the RCE is filed

- a. ☒ The Director is hereby authorized to charge the following fees, or credit any overpayments, to Pennie & Edmonds LLP Deposit Account No. 16-1150:
- i. ☒ RCE fee required under 37 C.F.R. § 1.17(e), estimated to be \$ 740.00
- ii. ☐ Extension of time fee required under 37 C.F.R. §§ 1.136 and 1.17, estimated to be \$ ____ for a ____ month extension, the request for which is being made herewith
- iii. ☐ Other ____
- b. ☐ Check in the amount of \$ ____ enclosed
- c. ☐ Payment by credit card (Form PTO-2038 enclosed)

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Name (Print/Type)	Laura A. Coruzzi	by <u>Jayalim B.</u>	Registration No. (Attorney/Agent)	30,742
Signature	<u>Laura A. Coruzzi</u>	Reg. No. <u>30,742</u>	Date	September 5, 2002

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner For Patents, Box RCE, Washington, DC 20231, or by facsimile transmitted to fax no. 1-703- to the U.S. Patent and Trademark Office on the date indicated below.

Name (Print/Type)		Registration No. (Attorney/Agent)	
Signature		Date	

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND Fees and Completed Forms to the following address: Commissioner for Patents, Box RCE, Washington, DC 20231.



Express Mail No.: EL 500 575 856 US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

RECEIVED

In re Application of: JIN et al.

APR 14 2003

Application No.: 09/161,122

Group Art Unit: 1642

TECH CENTER 1600/2900

Filed: September 25, 1998

Examiner: Brumback, B.

For: RECOMBINANT RSV
EXPRESSION SYSTEMS AND
VACCINES

Attorney Docket No.: 7682-045-999

FEE TRANSMITTAL SHEET

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

The fee required to be filed with the accompanying amendment of even date herewith concerning the above-identified application has been estimated to be \$0.

The claim amendment fee has been estimated as shown below:

(Col. 1)	(Col. 2)	(Col. 3)	SMALL ENTITY		OTHER THAN A SMALL ENTITY	
CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NO PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE	ADDIT. FEE	OR	ADDIT. FEE
TOTAL 5 MINUS 27	= 0	× 9	\$	× 18	\$	0.00
INDEP. 2 MINUS 7	= 0	× 42	\$	× 84	\$	0.00
□ FIRST PRESENTATION OF MULTIPLE DEP. CLAIM			140	\$	280	\$
			TOTAL	\$	OR TOTAL	\$ 0.00

Please charge the required fee to Pennie & Edmonds LLP Deposit Account No. 16-1150.
A copy of this sheet is enclosed.

Date September 5, 2002

Respectfully submitted,

by: *Jacqueline Penn*
Laura A. Coruzzi
Laura A. Coruzzi (Reg. No.)

PENNIE & EDMONDS LLP
1155 Avenue of Americas
New York, N.Y. 10036-2711
(212) 790-9090

Enclosure



Express Mail No.: EL 500 575 856 US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

RECEIVED

Application of: JIN et al.

APR 14 2003

Serial No.: 09/161,122

Art Unit: 1642

Filed: September 25, 1998

Examiner: Brumback, B.

TECH CENTER 1600/2900

For: RECOMBINANT RSV
EXPRESSION SYSTEMS AND
VACCINES

Attorney Docket No.: 7682-045-999

PETITION FOR EXTENSION OF TIME UNDER 37 CFR § 1.136(a)

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

It is respectfully requested that the time for response to the Office Action dated
March 7, 2002, be extended for a period of 4 month(s) from May 7, 2002 to and including September
7, 2002.

The fee for this extension is estimated to be \$1,440.00. Please charge the required fee
to Pennie & Edmonds LLP Deposit Account No. 16-1150. A copy of this sheet is enclosed.

Date September 5, 2002

Respectfully submitted,

by: *Jaqueline Benn*
Laura A. Coruzzi Reg No. 43,492
30,742

Laura A. Coruzzi

(Reg. No.)

PENNIE & EDMONDS LLP
1155 Avenue of the Americas
New York, N.Y. 10036-2711
(212) 790-9090



SEQUENCE LISTING

<110> Hong Jin et al.

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18

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17

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17

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35 40 45
Ile Ser Arg Gln Asn Pro Leu Ile Glu His Met Asn Leu Lys Lys Leu
50 55 60
Asn Ile Thr Gln Ser Leu Ile Ser Lys Tyr His Lys Gly Glu Ile Lys
65 70 75 80
Leu Glu Glu Pro Thr Tyr Phe Gln Ser Leu Leu Met Thr Tyr Lys Ser
85 90 95
Met Thr Ser Ser Glu Gln Ile Ala Thr Thr Asn Leu Leu Lys Lys Ile
100 105 110
Ile Arg Arg Ala Ile Glu Ile Ser Asp Val Lys Val Tyr Ala Ile Leu
115 120 125

Asn Lys Leu Gly Leu Lys Glu Lys Asp Lys Ile Lys Ser Asn Asn Gly
 130 135 140
 Gln Asp Glu Asp Asn Ser Val Ile Thr Thr Ile Ile Lys Asp Asp Ile
 145 150 155 160
 Leu Ser Ala Val Lys Asp Asn Gln Ser His Leu Lys Ala Asp Lys Asn
 165 170 175
 His Ser Thr Lys Gln Lys Asp Thr Ile Lys Thr Thr Leu Leu Lys Lys
 180 185 190
 Leu Met Cys Ser Met Gln His Pro Pro Ser Trp Leu Ile His Trp Phe
 195 200 205
 Asn Leu Tyr Thr Lys Leu Asn Asn Ile Leu Thr Gln Tyr Arg Ser Asn
 210 215 220
 Glu Val Lys Asn His Gly Phe Thr Leu Ile Asp Asn Gln Thr Leu Ser
 225 230 235 240
 Gly Phe Gln Phe Ile Leu Asn Gln Tyr Gly Cys Ile Val Tyr His Lys
 245 250 255
 Glu Leu Lys Arg Ile Thr Val Thr Thr Tyr Asn Gln Phe Leu Thr Trp
 260 265 270
 Lys Asp Ile Ser Leu Ser Arg Leu Asn Val Cys Leu Ile Thr Trp Ile
 275 280 285
 Ser Asn Cys Leu Asn Thr Leu Asn Lys Ser Leu Gly Leu Arg Cys Gly
 290 295 300
 Phe Asn Asn Val Ile Leu Thr Gln Leu Phe Leu Tyr Gly Asp Cys Ile
 305 310 315 320
 Leu Lys Leu Phe His Asn Glu Gly Phe Tyr Ile Ile Lys Glu Val Glu
 325 330 335
 Gly Phe Ile Met Ser Leu Ile Leu Asn Ile Thr Glu Glu Asp Gln Phe
 340 345 350
 Arg Lys Arg Phe Tyr Asn Ser Met Leu Asn Asn Ile Thr Asp Ala Ala
 355 360 365
 Asn Lys Ala Gln Lys Asn Leu Ser Arg Val Cys His Thr Leu Leu
 370 375 380
 Asp Lys Thr Val Ser Asp Asn Ile Ile Asn Gly Arg Trp Ile Ile Leu
 385 390 395 400
 Leu Ser Lys Phe Leu Lys Leu Ile Lys Leu Ala Gly Asp Asn Asn Leu
 405 410 415
 Asn Asn Leu Ser Glu Leu Tyr Phe Leu Phe Arg Ile Phe Gly His Pro
 420 425 430
 Met Val Asp Glu Arg Gln Ala Met Asp Ala Val Lys Ile Asn Cys Asn
 435 440 445
 Glu Thr Lys Phe Tyr Leu Leu Ser Ser Leu Ser Met Leu Arg Gly Ala
 450 455 460
 Phe Ile Tyr Arg Ile Ile Lys Gly Phe Val Asn Asn Tyr Asn Arg Trp
 465 470 475 480
 Pro Thr Leu Arg Asn Ala Ile Val Leu Pro Leu Arg Trp Leu Thr Tyr
 485 490 495
 Tyr Lys Leu Asn Thr Tyr Pro Ser Leu Leu Glu Leu Thr Glu Arg Asp
 500 505 510
 Leu Ile Val Leu Ser Gly Leu Arg Phe Tyr Arg Glu Phe Arg Leu Pro
 515 520 525
 Lys Lys Val Asp Leu Glu Met Ile Ile Asn Asp Lys Ala Ile Ser Pro
 530 535 540
 Pro Lys Asn Leu Ile Trp Thr Ser Phe Pro Arg Asn Tyr Met Pro Ser
 545 550 555 560
 His Ile Gln Asn Tyr Ile Glu His Glu Lys Leu Lys Phe Ser Glu Ser
 565 570 575
 Asp Lys Ser Arg Arg Val Leu Glu Tyr Tyr Leu Arg Asp Asn Lys Phe
 580 585 590

Asn Glu Cys Asp Leu Tyr Asn Cys Val Val Asn Gln Ser Tyr Leu Asn
 595 600 605
 Asn Pro Asn His Val Val Ser Leu Thr Gly Lys Glu Arg Glu Leu Ser
 610 615 620
 Val Gly Arg Met Phe Ala Met Gln Pro Gly Met Phe Arg Gln Val Gln
 625 630 635 640
 Ile Leu Ala Glu Lys Met Ile Ala Glu Asn Ile Leu Gln Phe Phe Pro
 645 650 655
 Glu Ser Leu Thr Arg Tyr Gly Asp Leu Glu Leu Gln Lys Ile Leu Glu
 660 665 670
 Leu Lys Ala Gly Ile Ser Asn Lys Ser Asn Arg Tyr Asn Asp Asn Tyr
 675 680 685
 Asn Asn Tyr Ile Ser Lys Cys Ser Ile Ile Thr Asp Leu Ser Lys Phe
 690 695 700
 Asn Gln Ala Phe Arg Tyr Glu Thr Ser Cys Ile Cys Ser Asp Val Leu
 705 710 715 720
 Asp Glu Leu His Gly Val Gln Ser Leu Phe Ser Trp Leu His Leu Thr
 725 730 735
 Ile Pro His Val Thr Ile Ile Cys Thr Tyr Arg His Ala Pro Pro Tyr
 740 745 750
 Ile Gly Asp His Ile Val Asp Leu Asn Asn Val Asp Glu Gln Ser Gly
 755 760 765
 Leu Tyr Arg Tyr His Met Gly Gly Ile Glu Gly Trp Cys Gln Lys Leu
 770 775 780
 Trp Thr Ile Glu Ala Ile Ser Leu Leu Asp Leu Ile Ser Leu Lys Gly
 785 790 795 800
 Lys Phe Ser Ile Thr Ala Leu Ile Asn Gly Asp Asn Gln Ser Ile Asp
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 Ile Ser Lys Pro Ile Arg Leu Met Glu Gly Gln Thr His Ala Gln Ala
 820 825 830
 Asp Tyr Leu Leu Ala Leu Asn Ser Leu Lys Leu Leu Tyr Lys Glu Tyr
 835 840 845
 Ala Gly Ile Gly His Lys Leu Lys Gly Thr Glu Thr Tyr Ile Ser Arg
 850 855 860
 Asp Met Gln Phe Met Ser Lys Thr Ile Gln His Asn Gly Val Tyr Tyr
 865 870 875 880
 Pro Ala Ser Ile Lys Lys Val Leu Arg Val Gly Pro Trp Ile Asn Thr
 885 890 895
 Ile Leu Asp Asp Phe Lys Val Ser Leu Glu Ser Ile Gly Ser Leu Thr
 900 905 910
 Gln Glu Leu Glu Tyr Arg Gly Glu Ser Leu Leu Cys Ser Leu Ile Phe
 915 920 925
 Arg Asn Val Trp Leu Tyr Asn Gln Ile Ala Leu Gln Leu Lys Asn His
 930 935 940
 Ala Leu Cys Asn Asn Lys Leu Tyr Leu Asp Ile Leu Lys Val Leu Lys
 945 950 955 960
 His Leu Lys Thr Phe Phe Asn Leu Asp Asn Ile Asp Thr Ala Leu Thr
 965 970 975
 Leu Tyr Met Asn Leu Pro Met Leu Phe Gly Gly Gly Asp Pro Asn Leu
 980 985 990
 Leu Tyr Arg Ser Phe Tyr Arg Arg Thr Pro Asp Phe Leu Thr Glu Ala
 995 1000 1005
 Ile Val His Ser Val Phe Ile Leu Ser Tyr Tyr Thr Asn His Asp Leu
 1010 1015 1020
 Lys Asp Lys Leu Gln Asp Leu Ser Asp Asp Arg Leu Asn Lys Phe Leu
 1025 1030 1035 1040
 Thr Cys Ile Ile Thr Phe Asp Lys Asn Pro Asn Ala Glu Phe Val Thr
 1045 1050 1055

Leu Met Arg Asp Pro Gln Ala Leu Gly Ser Glu Arg Gln Ala Lys Ile
 1060 1065 1070
 Thr Ser Glu Ile Asn Arg Leu Ala Val Thr Glu Val Leu Ser Thr Ala
 1075 1080 1085
 Pro Asn Lys Ile Phe Ser Lys Ser Ala Gln His Tyr Thr Thr Thr Glu
 1090 1095 1100
 Ile Asp Leu Asn Asp Ile Met Gln Asn Ile Glu Pro Thr Tyr Pro His
 1105 1110 1115 1120
 Gly Leu Arg Val Val Tyr Glu Ser Leu Pro Phe Tyr Lys Ala Glu Lys
 1125 1130 1135
 Ile Val Asn Leu Ile Ser Gly Thr Lys Ser Ile Thr Asn Ile Leu Glu
 1140 1145 1150
 Lys Thr Ser Ala Ile Asp Leu Thr Asp Ile Asp Arg Ala Thr Glu Met
 1155 1160 1165
 Met Arg Lys Asn Ile Thr Leu Leu Ile Arg Ile Leu Pro Leu Asp Cys
 1170 1175 1180
 Asn Arg Asp Lys Arg Glu Ile Leu Ser Met Glu Asn Leu Ser Ile Thr
 1185 1190 1195 1200
 Glu Leu Ser Lys Tyr Val Arg Glu Arg Ser Trp Ser Leu Ser Asn Ile
 1205 1210 1215
 Val Gly Val Thr Ser Pro Ser Ile Met Tyr Thr Met Asp Ile Lys Tyr
 1220 1225 1230
 Thr Thr Ser Thr Ile Ser Ser Gly Ile Ile Ile Glu Lys Tyr Asn Val
 1235 1240 1245
 Asn Ser Leu Thr Arg Gly Glu Arg Gly Pro Thr Lys Pro Trp Val Gly
 1250 1255 1260
 Ser Ser Thr Gln Glu Lys Lys Thr Met Pro Val Tyr Asn Arg Gln Val
 1265 1270 1275 1280
 Leu Thr Lys Lys Gln Arg Asp Gln Ile Asp Leu Leu Ala Lys Leu Asp
 1285 1290 1295
 Trp Val Tyr Ala Ser Ile Asp Asn Lys Asp Glu Phe Met Glu Glu Leu
 1300 1305 1310
 Ser Ile Gly Thr Leu Gly Leu Thr Tyr Glu Lys Ala Lys Lys Leu Phe
 1315 1320 1325
 Pro Gln Tyr Leu Ser Val Asn Tyr Leu His Arg Leu Thr Val Ser Ser
 1330 1335 1340
 Arg Pro Cys Glu Phe Pro Ala Ser Ile Pro Ala Tyr Arg Thr Thr Asn
 1345 1350 1355 1360
 Tyr His Phe Asp Thr Ser Pro Ile Asn Arg Ile Leu Thr Glu Lys Tyr
 1365 1370 1375
 Gly Asp Glu Asp Ile Asp Ile Val Phe Gln Asn Cys Ile Ser Phe Gly
 1380 1385 1390
 Leu Ser Leu Met Ser Val Val Glu Gln Phe Thr Asn Val Cys Pro Asn
 1395 1400 1405
 Arg Ile Ile Leu Ile Pro Lys Leu Asn Glu Ile His Leu Met Lys Pro
 1410 1415 1420
 Pro Ile Phe Thr Gly Asp Val Asp Ile His Lys Leu Lys Gln Val Ile
 1425 1430 1435 1440
 Gln Lys Gln His Met Phe Leu Pro Asp Lys Ile Ser Leu Thr Gln Tyr
 1445 1450 1455
 Val Glu Leu Phe Leu Ser Asn Lys Thr Leu Lys Ser Gly Ser His Val
 1460 1465 1470
 Asn Ser Asn Leu Ile Leu Ala His Lys Ile Ser Asp Tyr Phe His Asn
 1475 1480 1485
 Thr Tyr Ile Leu Ser Thr Asn Leu Ala Gly His Trp Ile Leu Ile Ile
 1490 1495 1500
 Gln Leu Met Lys Asp Ser Lys Gly Ile Phe Glu Lys Asp Trp Gly Glu
 1505 1510 1515 1520

Gly Tyr Ile Thr Asp His Met Phe Ile Asn Leu Lys Val Phe Phe Asn
 1525 1530 1535
 Ala Tyr Lys Thr Tyr Leu Leu Cys Phe His Lys Gly Tyr Gly Lys Ala
 1540 1545 1550
 Lys Leu Glu Cys Asp Met Asn Thr Ser Asp Leu Leu Cys Val Leu Glu
 1555 1560 1565
 Leu Ile Asp Ser Ser Tyr Trp Lys Ser Met Ser Lys Val Phe Leu Glu
 1570 1575 1580
 Gln Lys Val Ile Lys Tyr Ile Leu Ser Gln Asp Ala Ser Leu His Arg
 1585 1590 1595 1600
 Val Lys Gly Cys His Ser Phe Lys Leu Trp Phe Leu Lys Arg Leu Asn
 1605 1610 1615
 Val Ala Glu Phe Thr Val Cys Pro Trp Val Val Asn Ile Asp Tyr His
 1620 1625 1630
 Pro Thr His Met Lys Ala Ile Leu Thr Tyr Ile Asp Leu Val Arg Met
 1635 1640 1645
 Gly Leu Ile Asn Ile Asp Arg Ile His Ile Lys Asn Lys His Lys Phe
 1650 1655 1660
 Asn Asp Glu Phe Tyr Thr Ser Asn Leu Phe Tyr Ile Asn Tyr Asn Phe
 1665 1670 1675 1680
 Ser Asp Asn Thr His Leu Leu Thr Lys His Ile Arg Ile Ala Asn Ser
 1685 1690 1695
 Glu Leu Glu Asn Asn Tyr Asn Lys Leu Tyr His Pro Thr Pro Glu Thr
 1700 1705 1710
 Leu Glu Asn Ile Leu Ala Asn Pro Ile Lys Ser Asn Asp Lys Lys Thr
 1715 1720 1725
 Leu Asn Asp Tyr Cys Ile Gly Lys Asn Val Asp Ser Ile Met Leu Pro
 1730 1735 1740
 Leu Leu Ser Asn Lys Lys Leu Ile Lys Ser Ser Ala Met Ile Arg Thr
 1745 1750 1755 1760
 Asn Tyr Ser Lys Gln Asp Leu Tyr Asn Leu Phe Pro Met Val Val Ile
 1765 1770 1775
 Asp Arg Ile Ile Asp His Ser Gly Asn Thr Ala Lys Ser Asn Gln Leu
 1780 1785 1790
 Tyr Thr Thr Thr Ser His Gln Ile Ser Leu Val His Asn Ser Thr Ser
 1795 1800 1805
 Leu Tyr Cys Met Leu Pro Trp His His Ile Asn Arg Phe Asn Phe Val
 1810 1815 1820
 Phe Ser Ser Thr Gly Cys Lys Ile Ser Ile Glu Tyr Ile Leu Lys Asp
 1825 1830 1835 1840
 Leu Lys Ile Lys Asp Pro Asn Cys Ile Ala Phe Ile Gly Glu Gly Ala
 1845 1850 1855
 Gly Asn Leu Leu Leu Arg Thr Val Val Glu Leu His Pro Asp Ile Arg
 1860 1865 1870
 Tyr Ile Tyr Arg Ser Leu Lys Asp Cys Asn Asp His Ser Leu Pro Ile
 1875 1880 1885
 Glu Phe Leu Arg Leu Tyr Asn Gly His Ile Asn Ile Asp Tyr Gly Glu
 1890 1895 1900
 Asn Leu Thr Ile Pro Ala Thr Asp Ala Thr Asn Asn Ile His Trp Ser
 1905 1910 1915 1920
 Tyr Leu His Ile Lys Phe Ala Glu Pro Ile Ser Leu Phe Val Cys Asp
 1925 1930 1935
 Ala Glu Leu Ser Val Thr Val Asn Trp Ser Lys Ile Ile Ile Glu Trp
 1940 1945 1950
 Ser Lys His Val Arg Lys Cys Lys Tyr Cys Ser Ser Val Asn Lys Cys
 1955 1960 1965
 Met Leu Ile Val Lys Tyr His Ala Gln Asp Asp Ile Asp Phe Lys Leu
 1970 1975 1980

Asp Asn Ile Thr Ile Leu Lys Thr Tyr Val Cys Leu Gly Ser Lys Leu
 1985 1990 1995 2000
 Lys Gly Ser Glu Val Tyr Leu Val Leu Thr Ile Gly Pro Ala Asn Ile
 2005 2010 2015
 Phe Pro Val Phe Asn Val Val Gln Asn Ala Lys Leu Ile Leu Ser Arg
 2020 2025 2030
 Thr Lys Asn Phe Ile Met Pro Lys Lys Ala Asp Lys Glu Ser Ile Asp
 2035 2040 2045
 Ala Asn Ile Lys Ser Leu Ile Pro Phe Leu Cys Tyr Pro Ile Thr Lys
 2050 2055 2060
 Lys Gly Ile Asn Thr Ala Leu Ser Lys Leu Lys Ser Val Val Ser Gly
 2065 2070 2075 2080
 Asp Ile Leu Ser Tyr Ser Ile Ala Gly Arg Asn Glu Val Phe Ser Asn
 2085 2090 2095
 Lys Leu Ile Asn His Lys His Met Asn Ile Leu Lys Trp Phe Asn His
 2100 2105 2110
 Val Leu Asn Phe Arg Ser Thr Glu Leu Asn Tyr Asn His Leu Tyr Met
 2115 2120 2125
 Val Glu Ser Thr Tyr Pro Tyr Leu Ser Glu Leu Leu Asn Ser Leu Thr
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 Asn Phe His Asn Glu
 2165

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 35 40 45
 Ile Ser Arg Gln Asn Pro Leu Ile Glu His Met Asn Leu Lys Lys Leu
 50 55 60
 Asn Ile Thr Gln Ser Leu Ile Ser Lys Tyr His Lys Gly Glu Ile Lys
 65 70 75 80
 Leu Glu Glu Pro Thr Tyr Phe Gln Ser Leu Leu Met Thr Tyr Lys Ser
 85 90 95
 Met Thr Ser Ser Glu Gln Ile Ala Thr Thr Asn Leu Leu Lys Lys Ile
 100 105 110
 Ile Arg Arg Ala Ile Glu Ile Ser Asp Val Lys Val Tyr Ala Ile Leu
 115 120 125
 Asn Lys Leu Gly Leu Lys Glu Lys Asp Lys Ile Lys Ser Asn Asn Gly
 130 135 140
 Gln Asp Glu Asp Asn Ser Val Ile Thr Thr Ile Ile Lys Asp Asp Ile
 145 150 155 160
 Leu Ser Ala Val Lys Asp Asn Gln Ser His Leu Lys Ala Asp Lys Asn
 165 170 175
 His Ser Thr Lys Gln Lys Asp Thr Ile Lys Thr Thr Leu Leu Lys Lys
 180 185 190
 Leu Met Cys Ser Met Gln His Pro Pro Ser Trp Leu Ile His Trp Phe
 195 200 205

Asn Leu Tyr Thr Lys Leu Asn Asn Ile Leu Thr Gln Tyr Arg Ser Asn
 210 215 220
 Glu Val Lys Asn His Gly Phe Thr Leu Ile Asp Asn Gln Thr Leu Ser
 225 230 235 240
 Gly Phe Gln Phe Ile Leu Asn Gln Tyr Gly Cys Ile Val Tyr His Lys
 245 250 255
 Glu Leu Lys Arg Ile Thr Val Thr Thr Tyr Asn Gln Phe Leu Thr Trp
 260 265 270
 Lys Asp Ile Ser Leu Ser Arg Leu Asn Val Cys Leu Ile Thr Trp Ile
 275 280 285
 Ser Asn Cys Leu Asn Thr Leu Asn Lys Ser Leu Gly Leu Arg Cys Gly
 290 295 300
 Phe Asn Asn Val Ile Leu Thr Gln Leu Phe Leu Tyr Gly Asp Cys Ile
 305 310 315 320
 Leu Lys Leu Phe His Asn Glu Gly Phe Tyr Ile Ile Lys Glu Val Glu
 325 330 335
 Gly Phe Ile Met Ser Leu Ile Leu Asn Ile Thr Glu Glu Asp Gln Phe
 340 345 350
 Arg Lys Arg Phe Tyr Asn Ser Met Leu Asn Asn Ile Thr Asp Ala Ala
 355 360 365
 Asn Lys Ala Gln Lys Asn Leu Ser Arg Val Cys His Thr Leu Leu
 370 375 380
 Asp Lys Thr Val Ser Asp Asn Ile Ile Asn Gly Arg Trp Ile Ile Leu
 385 390 395 400
 Leu Ser Lys Phe Leu Lys Leu Ile Lys Leu Ala Gly Asp Asn Asn Leu
 405 410 415
 Asn Asn Leu Ser Glu Leu Tyr Phe Leu Phe Arg Ile Phe Gly His Pro
 420 425 430
 Met Val Asp Glu Arg Gln Ala Met Asp Ala Val Lys Ile Asn Cys Asn
 435 440 445
 Glu Thr Lys Phe Tyr Leu Leu Ser Ser Leu Ser Met Leu Arg Gly Ala
 450 455 460
 Phe Ile Tyr Arg Ile Ile Lys Gly Phe Val Asn Asn Tyr Asn Arg Trp
 465 470 475 480
 Pro Thr Leu Arg Asn Ala Ile Val Leu Pro Leu Arg Trp Leu Thr Tyr
 485 490 495
 Tyr Lys Leu Asn Thr Tyr Pro Ser Leu Leu Glu Leu Thr Glu Arg Asp
 500 505 510
 Leu Ile Val Leu Ser Gly Leu Arg Phe Tyr Arg Glu Phe Arg Leu Pro
 515 520 525
 Lys Lys Val Asp Leu Glu Met Ile Ile Asn Asp Lys Ala Ile Ser Pro
 530 535 540
 Pro Lys Asn Leu Ile Trp Thr Ser Phe Pro Arg Asn Tyr Met Pro Ser
 545 550 555 560
 His Ile Gln Asn Tyr Ile Glu His Glu Lys Leu Lys Phe Ser Glu Ser
 565 570 575
 Asp Lys Ser Arg Arg Val Leu Glu Tyr Tyr Leu Arg Asp Asn Lys Phe
 580 585 590
 Asn Glu Cys Asp Leu Tyr Asn Cys Val Val Asn Gln Ser Tyr Leu Asn
 595 600 605
 Asn Pro Asn His Val Val Ser Leu Thr Gly Lys Glu Arg Glu Leu Ser
 610 615 620
 Val Gly Arg Met Phe Ala Met Gln Pro Gly Met Phe Arg Gln Val Gln
 625 630 635 640
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 645 650 655
 Glu Ser Leu Thr Arg Tyr Gly Asp Leu Glu Leu Gln Lys Ile Leu Glu
 660 665 670

Leu Lys Ala Gly Ile Ser Asn Lys Ser Asn Arg Tyr Asn Asp Asn Tyr
 675 680 685
 Asn Asn Tyr Ile Ser Lys Cys Ser Ile Ile Thr Asp Leu Ser Lys Phe
 690 695 700
 Asn Gln Ala Phe Arg Tyr Glu Thr Ser Cys Ile Cys Ser Asp Val Leu
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 Asp Glu Leu His Gly Val Gln Ser Leu Phe Ser Trp Leu His Leu Thr
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 Ile Pro His Val Thr Ile Ile Cys Thr Tyr Arg His Ala Pro Pro Tyr
 740 745 750
 Ile Gly Asp His Ile Val Asp Leu Asn Asn Val Asp Glu Gln Ser Gly
 755 760 765
 Leu Tyr Arg Tyr His Met Gly Glu Ile Glu Gly Trp Cys Gln Lys Leu
 770 775 780
 Trp Thr Ile Glu Ala Ile Ser Leu Leu Asp Leu Ile Ser Leu Lys Gly
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 Lys Phe Ser Ile Thr Ala Leu Ile Asn Gly Asp Asn Gln Ser Ile Asp
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 Asp Tyr Leu Leu Ala Leu Asn Ser Leu Lys Leu Leu Tyr Lys Glu Tyr
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 Ala Gly Ile Gly His Lys Leu Lys Gly Thr Glu Thr Tyr Ile Ser Arg
 850 855 860
 Asp Met Gln Phe Met Ser Lys Thr Ile Gln His Asn Gly Val Tyr Tyr
 865 870 875 880
 Pro Ala Ser Ile Lys Lys Val Leu Arg Val Gly Pro Trp Ile Asn Thr
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 Gln Glu Leu Glu Tyr Arg Gly Glu Ser Leu Leu Cys Ser Leu Ile Phe
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 Arg Asn Val Trp Leu Tyr Asn Gln Ile Ala Leu Gln Leu Lys Asn His
 930 935 940
 Ala Leu Cys Asn Asn Lys Leu Tyr Leu Asp Ile Leu Lys Val Leu Lys
 945 950 955 960
 His Leu Lys Thr Phe Phe Asn Leu Asp Asn Ile Asp Thr Ala Leu Thr
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 995 1000 1005
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 Lys Asp Lys Leu Gln Asp Leu Ser Asp Asp Arg Leu Asn Lys Phe Leu
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 1090 1095 1100
 Ile Asp Leu Asn Asp Ile Met Gln Asn Ile Glu Pro Thr Tyr Pro His
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 Gly Leu Arg Val Val Tyr Glu Ser Leu Pro Phe Tyr Lys Ala Glu Lys
 1125 1130 1135

Ile Val Asn Leu Ile Ser Gly Thr Lys Ser Ile Thr Asn Ile Leu Glu
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 Lys Thr Ser Ala Ile Asp Leu Thr Asp Ile Asp Arg Ala Thr Glu Met
 1155 1160 1165
 Met Arg Lys Asn Ile Thr Leu Leu Ile Arg Ile Leu Pro Leu Asp Cys
 1170 1175 1180
 Asn Arg Asp Lys Arg Glu Ile Leu Ser Met Glu Asn Leu Ser Ile Thr
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 Glu Leu Ser Lys Tyr Val Arg Glu Arg Ser Trp Ser Leu Ser Asn Ile
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 Val Gly Val Thr Ser Pro Ser Ile Met Tyr Thr Met Asp Ile Lys Tyr
 1220 1225 1230
 Thr Thr Ser Thr Ile Ser Ser Gly Ile Ile Ile Glu Lys Tyr Asn Val
 1235 1240 1245
 Asn Ser Leu Thr Arg Gly Glu Arg Gly Pro Thr Lys Pro Trp Val Gly
 1250 1255 1260
 Ser Ser Thr Gln Glu Lys Lys Thr Met Pro Val Tyr Asn Arg Gln Val
 1265 1270 1275 1280
 Leu Thr Lys Lys Gln Arg Asp Gln Ile Asp Leu Leu Ala Lys Leu Asp
 1285 1290 1295
 Trp Val Tyr Ala Ser Ile Asp Asn Lys Asp Glu Phe Met Glu Glu Leu
 1300 1305 1310
 Ser Ile Gly Thr Leu Gly Leu Thr Tyr Glu Lys Ala Lys Lys Leu Phe
 1315 1320 1325
 Pro Gln Tyr Leu Ser Val Asn Tyr Leu His Arg Leu Thr Val Ser Ser
 1330 1335 1340
 Arg Pro Cys Glu Phe Pro Ala Ser Ile Pro Ala Tyr Arg Thr Thr Asn
 1345 1350 1355 1360
 Tyr His Phe Asp Thr Ser Pro Ile Asn Arg Ile Leu Thr Glu Lys Tyr
 1365 1370 1375
 Gly Asp Glu Asp Ile Asp Ile Val Phe Gln Asn Cys Ile Ser Phe Gly
 1380 1385 1390
 Leu Ser Leu Met Ser Val Val Glu Gln Phe Thr Asn Val Cys Pro Asn
 1395 1400 1405
 Arg Ile Ile Leu Ile Pro Lys Leu Asn Glu Ile His Leu Met Lys Pro
 1410 1415 1420
 Pro Ile Phe Thr Gly Asp Val Asp Ile His Lys Leu Lys Gln Val Ile
 1425 1430 1435 1440
 Gln Lys Gln His Met Phe Leu Pro Asp Lys Ile Ser Leu Thr Gln Tyr
 1445 1450 1455
 Val Glu Leu Phe Leu Ser Asn Lys Thr Leu Lys Ser Gly Ser His Val
 1460 1465 1470
 Asn Ser Asn Leu Ile Leu Ala His Lys Ile Ser Asp Tyr Phe His Asn
 1475 1480 1485
 Thr Tyr Ile Leu Ser Thr Asn Leu Ala Gly His Trp Ile Leu Ile Ile
 1490 1495 1500
 Gln Leu Met Lys Asp Ser Lys Gly Ile Phe Glu Lys Asp Trp Gly Glu
 1505 1510 1515 1520
 Gly Tyr Ile Thr Asp His Met Phe Ile Asn Leu Lys Val Phe Phe Asn
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 Ala Tyr Lys Thr Tyr Leu Leu Cys Phe His Lys Gly Tyr Gly Lys Ala
 1540 1545 1550
 Lys Leu Glu Cys Asp Met Asn Thr Ser Asp Leu Leu Cys Val Leu Glu
 1555 1560 1565
 Leu Ile Asp Ser Ser Tyr Trp Lys Ser Met Ser Lys Val Phe Leu Glu
 1570 1575 1580
 Gln Lys Val Ile Lys Tyr Ile Leu Ser Gln Asp Ala Ser Leu His Arg
 1585 1590 1595 1600

Val Lys Gly Cys His Ser Phe Lys Leu Trp Phe Leu Lys Arg Leu Asn
1605 1610 1615
Val Ala Glu Phe Thr Val Cys Pro Trp Val Val Asn Ile Asp Tyr His
1620 1625 1630
Pro Thr His Met Lys Ala Ile Leu Thr Tyr Ile Asp Leu Val Arg Met
1635 1640 1645
Gly Leu Ile Asn Ile Asp Arg Ile His Ile Lys Asn Lys His Lys Phe
1650 1655 1660
Asn Asp Glu Phe Tyr Thr Ser Asn Leu Phe Tyr Ile Asn Tyr Asn Phe
1665 1670 1675 1680
Ser Asp Asn Thr His Leu Leu Thr Lys His Ile Arg Ile Ala Asn Ser
1685 1690 1695
Glu Leu Glu Asn Asn Tyr Asn Lys Leu Tyr His Pro Thr Pro Glu Thr
1700 1705 1710
Leu Glu Asn Ile Leu Ala Asn Pro Ile Lys Ser Asn Asp Lys Lys Thr
1715 1720 1725
Leu Asn Asp Tyr Cys Ile Gly Lys Asn Val Asp Ser Ile Met Leu Pro
1730 1735 1740
Leu Leu Ser Asn Lys Lys Leu Ile Lys Ser Ser Ala Met Ile Arg Thr
1745 1750 1755 1760
Asn Tyr Ser Lys Gln Asp Leu Tyr Asn Leu Phe Pro Met Val Val Ile
1765 1770 1775
Asp Arg Ile Ile Asp His Ser Gly Asn Thr Ala Lys Ser Asn Gln Leu
1780 1785 1790
Tyr Thr Thr Thr Ser His Gln Ile Ser Leu Val His Asn Ser Thr Ser
1795 1800 1805
Leu Tyr Cys Met Leu Pro Trp His His Ile Asn Arg Phe Asn Phe Val
1810 1815 1820
Phe Ser Ser Thr Gly Cys Lys Ile Ser Ile Glu Tyr Ile Leu Lys Asp
1825 1830 1835 1840
Leu Lys Ile Lys Asp Pro Asn Cys Ile Ala Phe Ile Gly Glu Gly Ala
1845 1850 1855
Gly Asn Leu Leu Leu Arg Thr Val Val Glu Leu His Pro Asp Ile Arg
1860 1865 1870
Tyr Ile Tyr Arg Ser Leu Lys Asp Cys Asn Asp His Ser Leu Pro Ile
1875 1880 1885
Glu Phe Leu Arg Leu Tyr Asn Gly His Ile Asn Ile Asp Tyr Gly Glu
1890 1895 1900
Asn Leu Thr Ile Pro Ala Thr Asp Ala Thr Asn Asn Ile His Trp Ser
1905 1910 1915 1920
Tyr Leu His Ile Lys Phe Ala Glu Pro Ile Ser Leu Phe Val Cys Asp
1925 1930 1935
Ala Glu Leu Ser Val Thr Val Asn Trp Ser Lys Ile Ile Ile Glu Trp
1940 1945 1950
Ser Lys His Val Arg Lys Cys Lys Tyr Cys Ser Ser Val Asn Lys Cys
1955 1960 1965
Met Leu Ile Val Lys Tyr His Ala Gln Asp Asp Ile Asp Phe Lys Leu
1970 1975 1980
Asp Asn Ile Thr Ile Leu Lys Thr Tyr Val Cys Leu Gly Ser Lys Leu
1985 1990 1995 2000
Lys Gly Ser Glu Val Tyr Leu Val Leu Thr Ile Gly Pro Ala Asn Ile
2005 2010 2015
Phe Pro Val Phe Asn Val Val Gln Asn Ala Lys Leu Ile Leu Ser Arg
2020 2025 2030
Thr Lys Asn Phe Ile Met Pro Lys Lys Ala Asp Lys Glu Ser Ile Asp
2035 2040 2045
Ala Asn Ile Lys Ser Leu Ile Pro Phe Leu Cys Tyr Pro Ile Thr Lys
2050 2055 2060

Lys Gly Ile Asn Thr Ala Leu Ser Lys Leu Lys Ser Val Val Ser Gly
 2065 2070 2075 2080
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 2085 2090 2095
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 2100 2105 2110
 Val Leu Asn Phe Arg Ser Thr Glu Leu Asn Tyr Asn His Leu Tyr Met
 2115 2120 2125
 Val Glu Ser Thr Tyr Pro Tyr Leu Ser Glu Leu Leu Asn Ser Leu Thr
 2130 2135 2140
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 2145 2150 2155 2160
 Asn Phe His Asn Glu
 2165

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21

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24

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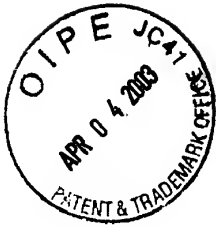
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49



Express Mail No.: EL 500 575 856 US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: JIN et al.

Application No.: 09/161,122

Group Art Unit: 1642

Filed: September 25, 1998

Examiner: Brumback, B.

For: RECOMBINANT RSV
EXPRESSION SYSTEMS AND
VACCINES

Attorney Docket No.: 7682-045-999

TRANSMITTAL OF FORMAL DRAWINGS

Assistant Commissioner for Patents
United States Patent and Trademark Office
(BOX PCT)
Washington, D.C. 20231

SIR/MADAM:

Applicants submit herewith 12 sheets of 12 formal figures to be substituted for the informal figures previously submitted in the above-identified application.

Date September 5, 2002

Respectfully submitted, by *Jacqueline Ben*
Reg. No. 43,492

Laura A. Coruzzi 30,742
Laura A. Coruzzi (Reg. No.)

PENNIE & EDMONDS LLP
1155 Avenue of Americas
New York, N.Y. 10036-2711
(212) 790-9090

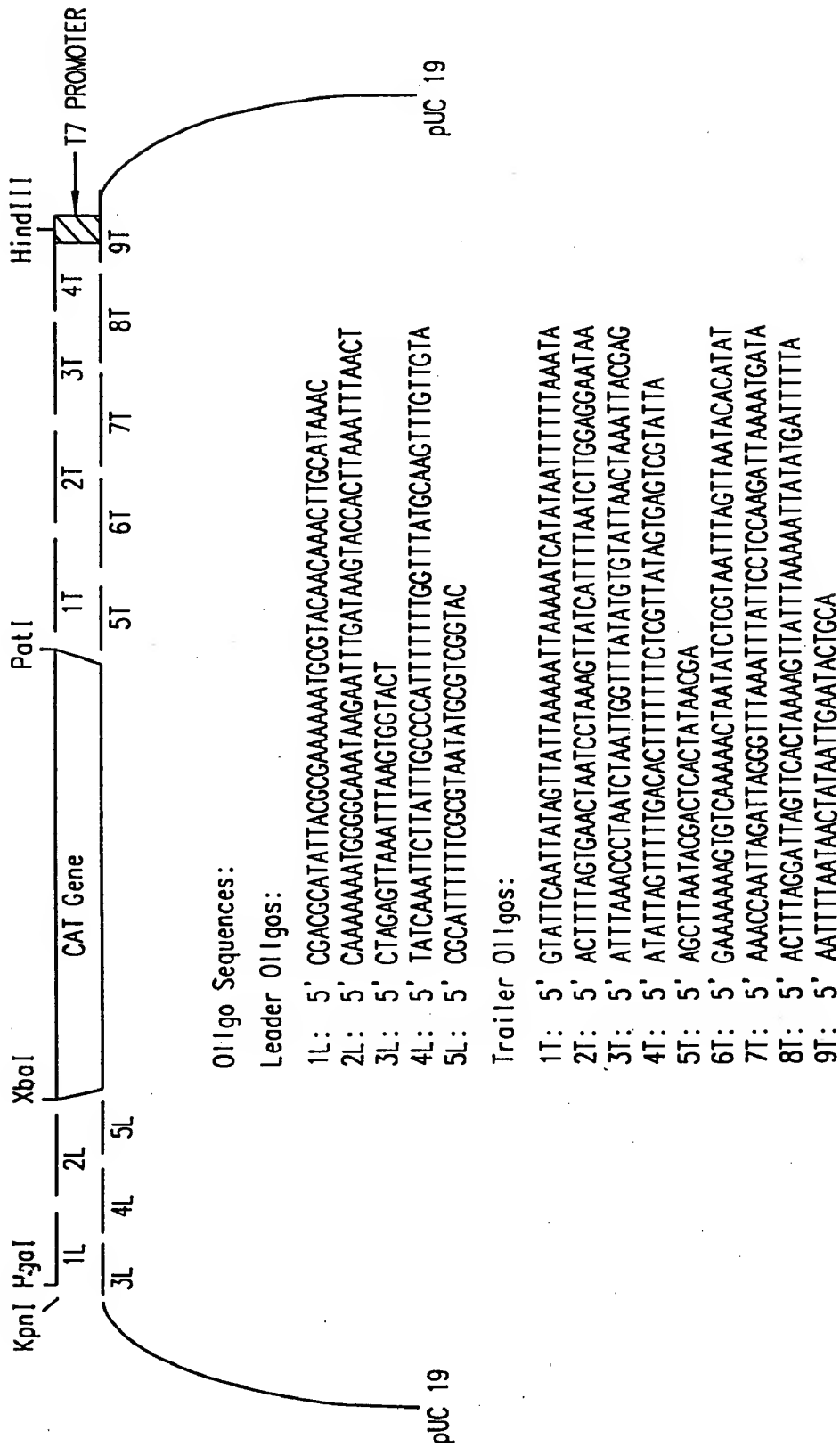


FIG. 1



Docket No.: 7682-045-999
Serial No.: 09/161,122
Inventor(s): Jin et al.
Title: Recombinant RSV Expression
Systems and Vaccines

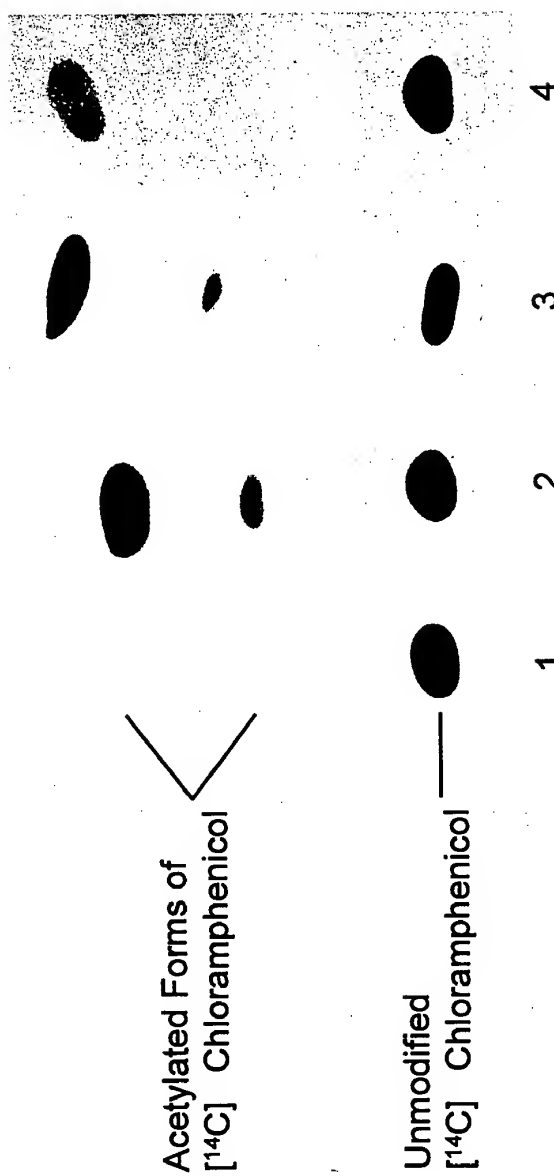


FIG.2

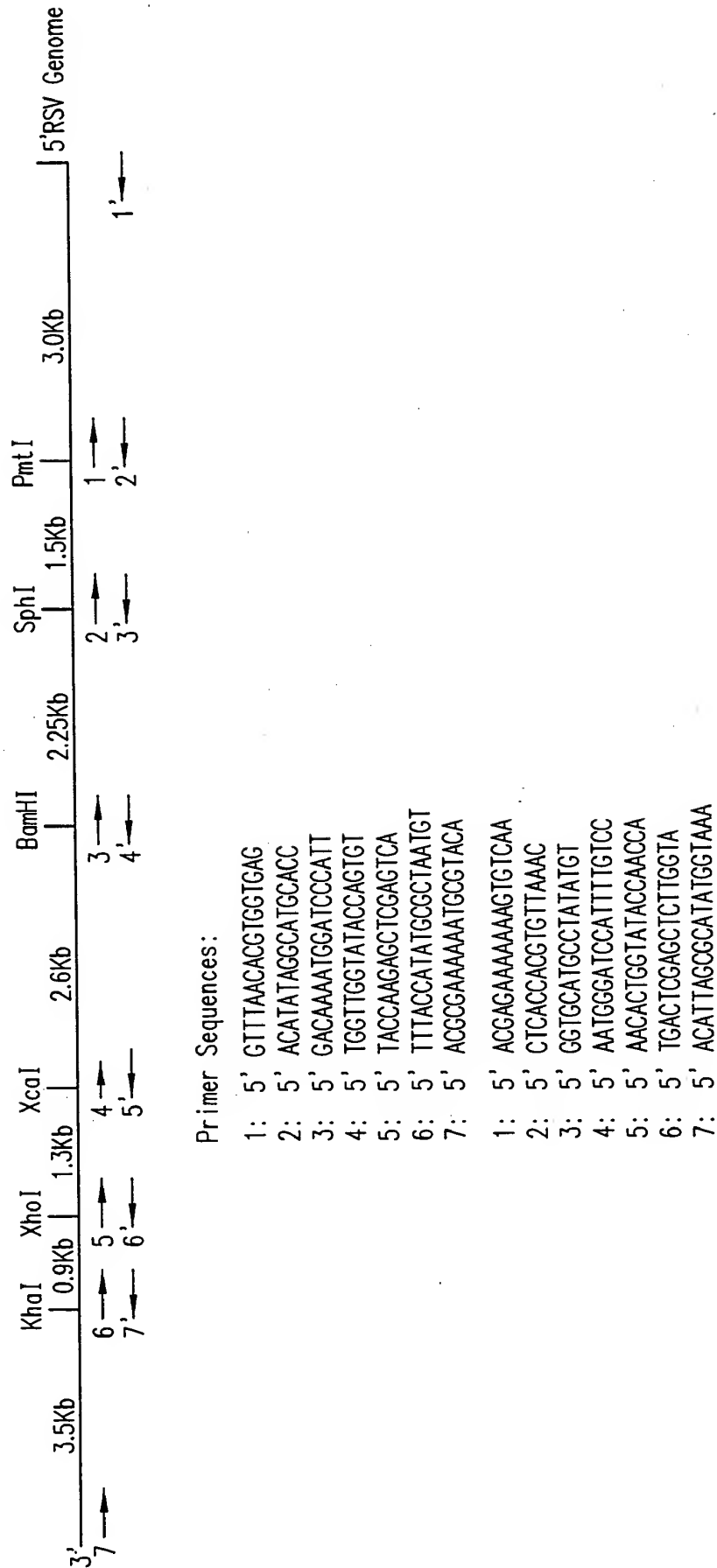


FIG.3



Docket No.: 7682-045-999
Serial No.: 09/161,122
Inventor(s): Jin et al.
Title: Recombinant RSV Expression
Systems and Vaccines

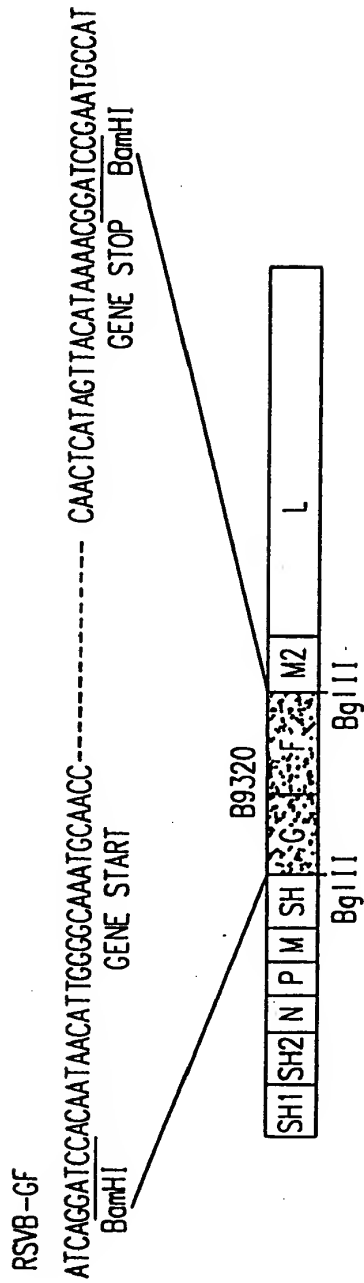


FIG.4A

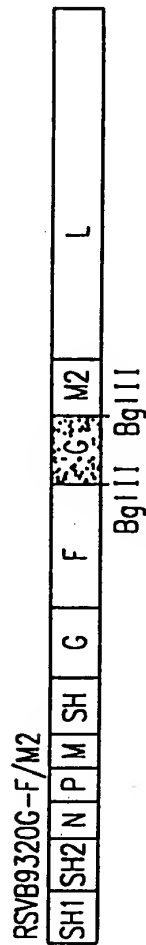


FIG.4B

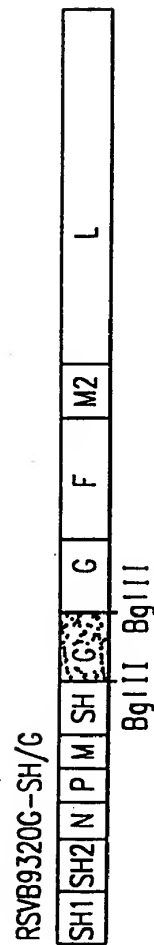


FIG.4C



Docket No.: 7682-045-999
Serial No.: 09/161,122
Inventor(s): Jin et al.
Title: Recombinant RSV Expression
Systems and Vaccines

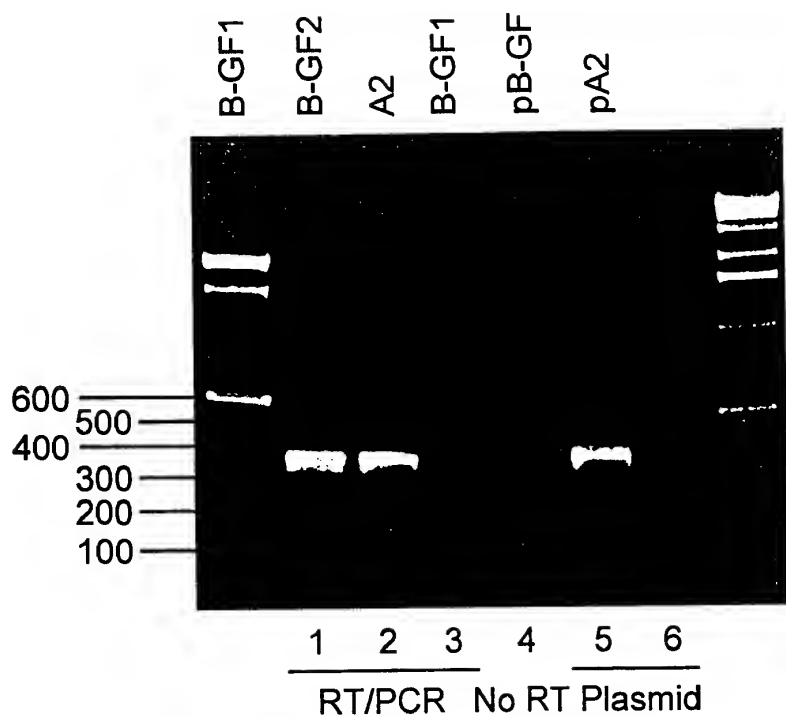


FIG.5



Docket No.: 7682-045-999
 Serial No.: 09/161,122
 Inventor(s): Jin et al.
 Title: Recombinant RSV Expression
 Systems and Vaccines

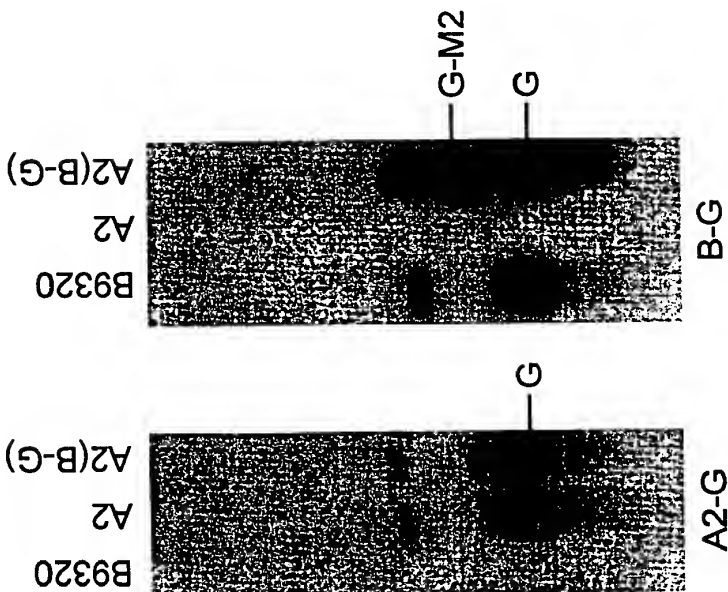


FIG. 6B

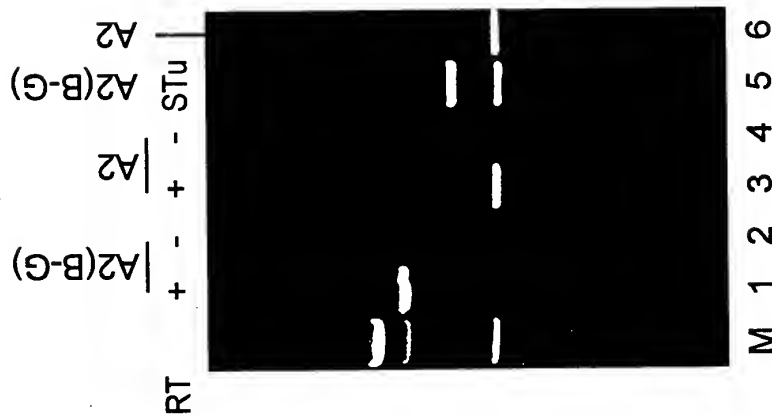


FIG. 6A



Docket No.: 7682-045-999
Serial No.: 09/161,122
Inventor(s): Jin et al.
Title: Recombinant RSV Expression
Systems and Vaccines

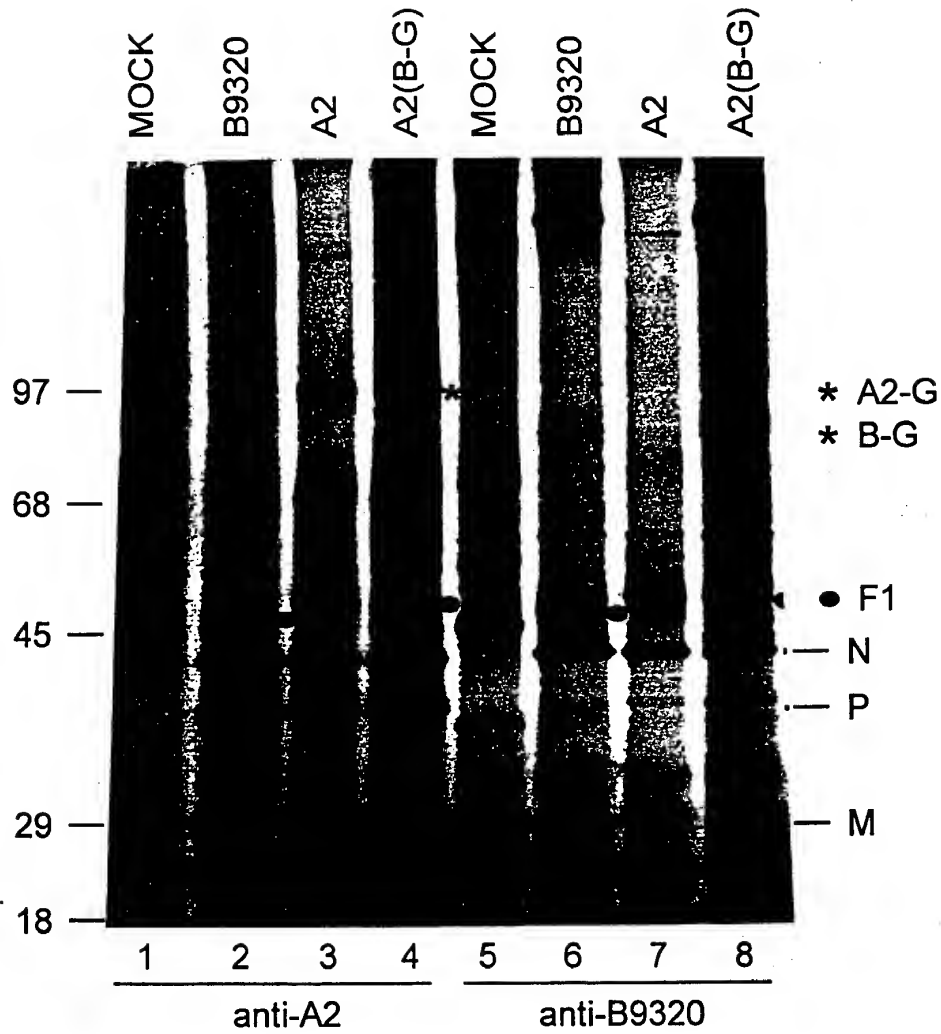


FIG.7



Docket No.: 7682-045-999
Serial No.: 09/161,122
Inventor(s): Jin et al.
Title: Recombinant RSV Expression
Systems and Vaccines

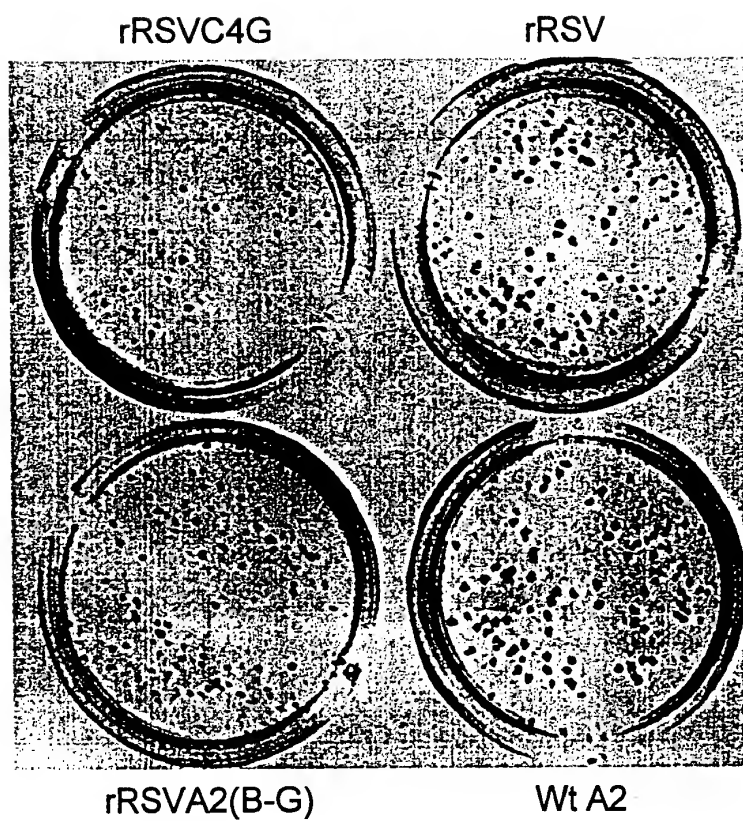


FIG.8

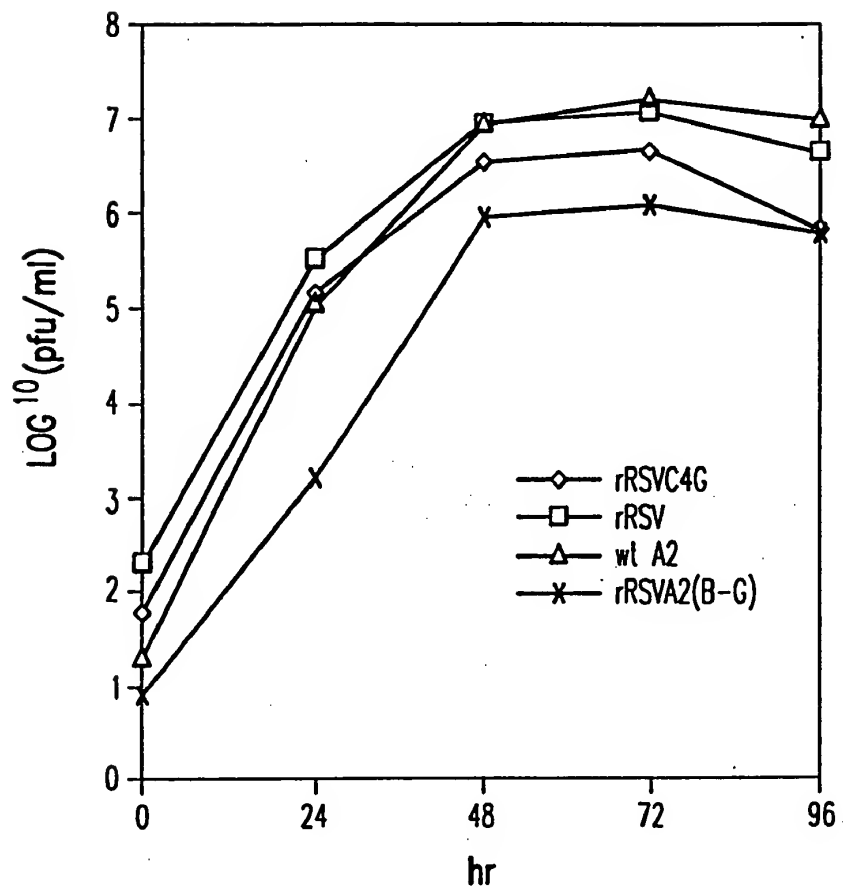


FIG.9



MDPIINGNSANVYLT DSYLKGVISFSECNA LGSYIFNGPYLKNDY TNLISRQNP¹LI²EHMN LK³KL⁴NI⁵TQ⁶SL⁷ISKYH 75
KGEIKLEPTYFQSL LMTYKSMTSSEQIAT TNLKKIIRRAIEIS DVKVYAILNKLGLKE KDKIKSNNGQ⁸EDNS 150
VITTIKDDILSAVK DNQSHLKADKNHSTK QRD⁹TIK¹⁰TLLKKLMC SMQPPSWLIHWFNL YTKLNNIL¹¹TQYRSNE 225
VKNHGFTLIDNQTLS GFQFILNQYGCIVYH KELKRITVTTYNQFL TWKDISLRLNVCLI TWISNCLNTLNKSLG 300
LRCGFNNVILTQLFL YGDCILKLFHNEGFI I¹²KEVEGFIMSLIN I¹³TEEDQFRKREYN¹⁴SM LNNITDAANKAQKNL 375
LSRVCHTL¹⁵LDKTVSD NIINGRWIILL¹⁶SKFL KLIKLAGDNNLNLS ELYFLFRIFGHPMVD ERQAMDAVKINCNET 450
KFYLLSSLSMLRGAF IYRIIKGFVN¹⁷YNRW PTLRNAIVLPLRWLT YYKLNTP¹⁸SLLEL¹⁹TE RDLIVLSGLRFYREF 525
RLPKKVDLEMIINDK AISPKNLIWTSFPR NYMPSHIQNYIEHEK LKFSESDKSRRVLEY YLRDNKFNECDLYNC 600
VWQSYLNNPNHVV²⁰S LTGKERELSVGRMFA MQPGMFRQVQILA²¹EK MIAENILQFFPESLT RYGDLELQKILELKA 675
GISNKSRYNDN²²YNN YISKCSII²³TDLSKEN QAFRYETSCICSDVL DELHGVQSLFSLHL TIPHV²⁴TIIC²⁵TYRHAP 750
PYIGDHIVDLNNVDE QSGLYRYHMGGIEGW COKLWTIEAISL²⁶DL ISLKGKFSITALING DNQSIDISKPIRLME 825
GQTHAQADYLLALNS LKLLYKEYAGIGHKL KGTETYIS²⁷RD²⁸MQFMS KTIQHNGVYYPASIK KVL²⁹PVGPWINTILDD 900
FKVSLESIGSLTQEL EYRGESLLCSLIFRN VWLYNQIALQLKNHA LCN³⁰NKLYLDILKVLK HLK³¹TFNLDNIDTAL 975
TLYMNLPMLFGGDP NLLYRSFYRRTPD³²FL TEAIVHSVFILSY³³YT NHD³⁴LKDKLQDLSDDR LNK³⁵FLTCIITFDKNP 1050
NAEFVTLMRDPOALG SERQAKITSEINRLA VTEVLSTAPNKIFSK SAQHYTTTEID³⁶LNDI MONIEPTYPHGLRVV 1125
YESLPFYKAEKIVNL ISGTSITNILEKTS AIDLTDIDRAT³⁷EMMR KNITLLIRILPLDCN RDKREILSMENLSIT 1200
ELSKYV³⁸RE³⁹SWSLN IVGVTSPSIMYTMDI KYTTSTISSGIIIEK YN⁴⁰NSLTRGERGPTK PWG⁴¹STQEKKTMPV 1275
YNRQVLT⁴²KQRDQID LLAKLDWYASIDNK DEFMEELSIGTLGT YEKAKKLPQYLSVN YLHRLTVSSR⁴³PCEFP 1350
ASIPAYRTTNYHEDT SPINRILTEKYGDED IDIVFQNCISFGLSL MSVVEQFTNVCNRI ILIPK⁴⁴NEIHLMKPP 1425
IFTGDVDIHLKQVI QKQHMFLPKISLTQ YVELFSLNKT⁴⁵LKSGS HWNSNLI⁴⁶LAHKISDY FHNTYILSTNLAGHW 1500
ILIIQLMKDSKGIFE KDWGEGYITD⁴⁷HMFIN LK⁴⁸VFFNAYKTYLLCF HKGYGKAKLECDMNT SDLLCVLELIDSSYW 1575
KSM⁴⁹SKVFL⁵⁰EQKVTKY ILSQDASLHRVKGCH SFKLWFLKRLNVAEF TVCPWVWNIDYHPTH MKAILTYIDLVRMGL 1650
INIDRIHIKNKH⁵¹KFN DEFYTSNLFYINYNF SDNTHLLTKHIRIAN SELENNY⁵²NKLYHPTP ETL⁵³ENILANPIKSND 1725
KKTLDNYCIGKNVDS IMLPLSNKKLIKSS AMIRTNYSKQDLYNL FPMWVIDRIIDHSGN TAKSNQLYTTTSHQI 1800
SLVHNSTSLYCMLPW HHINRFNVFSSTGC KISIEYILKDLKID PNCIAFIGEGAGNLL LRTVVELHPDIRYIY 1875
RSLKDCNDHSLPIEF LRLYN⁵⁴GHINIDYGEN LTIPATDATN⁵⁵NIHWS YLHIKFAEPISL⁵⁶FVC DAELS⁵⁷VTNWSKIII 1950
EWSKHVRKCKYCSSV NKCMLIVKYHAQDDI DFKLDNITILKTYVC LGSKLKGSEVYLVT IGPANIFPVFN⁵⁸VQN 2025
AKLILSR⁵⁹TKNFIMP⁶⁰K KADKESIDANIKSLI PFLCYPI⁶¹T⁶²KKGINTA LSKLSWVSGDILSY SIAGRNEVFSNKLIN 2100
HKHMILKWFNHVLN FRSTELN⁶³YNHLYMVE STYPYLS⁶⁴ELLNSLT NELKKLIKITGSLLY NFHNE 2165

Charged Clusters (Amino Acids that are underlined were changed to alanines)
Mutations in cpts-248/404
Mutation in cpts530

FIG.10



MDPIINGNSANVYLT DSYLKGVIISFSECNA LGSYIFNGPYLKNQDY TNLISRQNPLIEHMN LKKNITQSLISKYH 75
KGEIKLEPTYFQSL LMTYKSMTSSEQIAT TNLKKIIRRAIEIS DVKVYAILNKLGLKE KDKIKSNNGODEDNS 150
VITTIKDDILSAVK DNQSHLKADKNHSTK QRODTIKITLLKKLMC SMQHPSPWLTHWFNL YTKLNNILTOYRSNE 225
VKNHGFTLIDNQTLG GFQFILNQGCIVYH KELKRITVITTYNQFL TWKDISLSRLNVCCLI TWISNCLNTLNKSLG 300
LRCGFNNVILTQLFL YGDCILKLFHNEGFI IIEVEGEFTMSILN ITEEDQFRKREYNM LNNITDAANKAQKNL 375
LSRVCHTLDDKTVD NIINGRWIILLKFL KLKLAGDNMLNLS ELYFLFRIFGHPWD ERQAMDAVKINCNET 450
KFYLLSSLSMLRGAF IYRIKGFVNNYNRW PTLRNAIVLPLRWLT YYKLNTPSLELTE RDLIVLSGLRFYREF 525
RLPKKVDLEMIINDK AISPKNLIWTSFPR NYMPSHIQNVIEHEK LKFSSEKSRVRLEY YLRDNKFNECDLYNC 600
VVOQSYLNNPNHVS LTGKERELSVGRMFA MQPGMFRQVQILAEL MIAENILQFFESLT RYGDLELQKILEKA 675
GISNKSRYNDNYYN YISKCSIITDLSKFN QAFRYETSCISDVL DELHGVQSLFSLHL TIPHVTIICTYRHAP 750
PYIGDHIVDLNNVDE QSGLYRYHMGIEGW CQKLWTEIATSLDL ISLKGKFSITALLNG DNQSIDISKIRLME 825
GQTHAQADYLLALNS LKLLYKEYAGIGHKL KGTETYISRDMQFMS KTIQHNGVYYPASIK KVLPGWPWINTLDD 900
FKVSLESIGSLTQEL EYRGESLLCSLIFRN VWLYNQIALQLKNHA LCNNKLYDLILKVLK HLKTFNLDNIDTAL 975
TLVNNLPMFLGGGDP NLLYRSFYRRTPDFL TEAIVHSVFILSYTT NHDLDKQLQDSDR LNKFLICITIEDKNP 1050
NAEFTLMRDPQALG SERQAKITSEINRLA VTEVLSTAPNKFISK SAQHYTTTEIDLDNDI MQNIEPTYPHGLRW 1125
YESLPFYKAEKIVNL ISGTSKISITNILEKTS AIDLTDIDRATEMMR KNITLLIRILPDCN RDKREILSMENLSIT 1200
ELSKYVRERSWSLSN IVGVTSPSIMYTMDI KYTTSTISSGIIIEK YVNSLTRGERGPTK PWGSGSTQEKKTMPV 1275
YNRQVLTKKQDQID LLAKLDWVYASIDNK DEFMEELSIGTLGLT YEKAKKLFPQYLSVN YLHRLTVSSRPCEFP 1350
ASIPAYRTTNYHFDI SPINRILTEKYGDED IDIVFQNCISFGLSL MSWVEQFTNVCNRI ILIPKLEIHLMKPP 1425
IFTGDVDIHLKQVI QKQHMFLPKISLTQ YWELFLSNKTLKSGS HVNSNLIHAKISDY FHNTYILSTNLAGHW 1500
ILIIQLMKDSKGIFE KDWGEGYITDHMFN LKVFENAYKTYLLCF HKGYGKAKLECDMNT SDLLCVLELIDSSYV 1575
KSMKVFLEQKVIKY ILSQDASLHRVKGCH SFKLWFLKRLNVAEF TVCPWVWNIDYHPTH MKAILTYIDLVRMGL 1650
INIDRIHIKNKHKN DEFYTSNLFYINYNF SDNTHLLTKHIRAN SELENNYKNLYHPTP ETLENILANPIKSN 1725
KKTLDNYCIGKNVDS IMLPLLNNKKLIKSS AMIRTNYSKQDLNLY FPMVVIDRIIDHSGN TAKSNQLYTTTSHQI 1800
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RSLKDCNDHSLPIEF LRLYNGHINIDYGEN LTIPATDATNNIHS YLHIKFAEPISLFCV DAELSFTVNWSKIII 1950
EWSKHVRKCKYCSSV NKCMILIVKYHAQDDI DFKLDNITILKTYVC LSKLKGSEVYVLT IGPANIFPVFNQVN 2025
AKLILSRKNFIMP KADKESIDANIKSLI PFLCYPITKKGINA LSKLKSUVSGDILSY SIAGRNEVFSNKLIN 2100
HKHMNLIKMFNHVNL FRSTELNHNHLYMVE STPYLSELLNSLT NELKKLIKITGSLY NFNHE 2165

C Cysteine residues
C Cysteine residues that were changed to valine or aspartic acid
C Cysteine residues deleted

FIG.11



Docket No.: 7682-045-999
Serial No.: 09/161,122
Inventor(s): Jin et al.
Title: Recombinant RSV Expression
Systems and Vaccines



FIG.12A

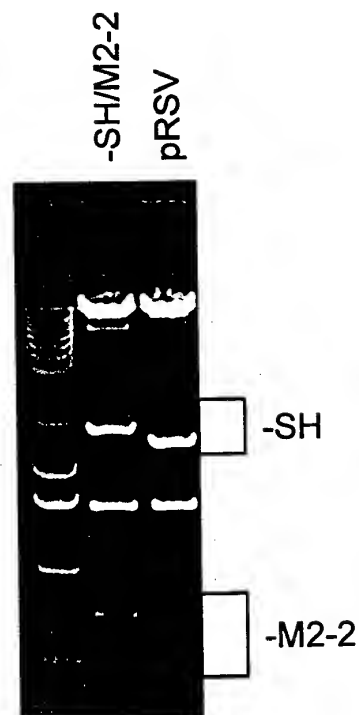


FIG.12B



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APR 14 2003

DECLARATION FOR NON-PROVISIONAL PATENT APPLICATION*

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below at 201 et seq. beneath my name.

TECH CENTER 1600/2900

I believe I am the original, first and sole inventor if only one name is listed at 201 below, or an original, first and joint inventor if plural names are listed at 201 et seq. below, of the subject matter which is claimed and for which a patent is sought on the invention entitled

RECOMBINANT RSV EXPRESSION SYSTEMS AND VACCINES

and for which a patent application:

- ☐ is attached hereto and includes amendment(s) filed on *(if applicable)*
☒ was filed in the United States on September 25, 1998 as Application No. 09/161,122 *(for declaration not accompanying application)*
with amendment(s) filed on even date herewith *(if applicable)*
☐ was filed as PCT international Application No. on and was amended under PCT Article 19 on *(if applicable)*

I hereby state that I have reviewed and understand the contents of the above identified application, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, §119(a)-(d) of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

EARLIEST FOREIGN APPLICATION(S), IF ANY, FILED PRIOR TO THE FILING DATE OF THE APPLICATION			
APPLICATION NUMBER	COUNTRY	DATE OF FILING (day, month, year)	PRIORITY CLAIMED
			YES <input type="checkbox"/> NO <input type="checkbox"/>
			YES <input type="checkbox"/> NO <input type="checkbox"/>
			YES <input type="checkbox"/> NO <input type="checkbox"/>

I hereby claim the benefit under Title 35, United States Code, §119(e) of any United States provisional application(s) listed below.

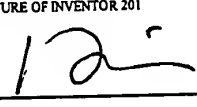

PROVISIONAL APPLICATION NUMBER	FILING DATE
60/060,153	September 26, 1997
60/084,133	May 1, 1998
60/089,207	June 12, 1998

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code §112, I acknowledge the duty to disclose information known to me which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

NON-PROVISIONAL APPLICATION SERIAL NO.	FILING DATE	STATUS		
		PATENTED	PENDING	ABANDONED
08/316,439	September 30, 1994	✓		

* for use only when the application is assigned to a company, partnership or other organization.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

2 0 1	FULL NAME OF INVENTOR	LAST NAME JIN	FIRST NAME Hong	MIDDLE NAME	
	RESIDENCE & CITIZENSHIP	CITY Cupertino	STATE OR FOREIGN COUNTRY California	COUNTRY OF CITIZENSHIP USA. People's Republic of China	
	POST OFFICE ADDRESS	STREET 22385 Santa Paula Avenue	CITY Cupertino	STATE OR COUNTRY California	ZIP CODE 95014
	SIGNATURE OF INVENTOR 201 			DATE 8/30/02	
2 0 2	FULL NAME OF INVENTOR	LAST NAME TANG	FIRST NAME Roderick	MIDDLE NAME	
	RESIDENCE & CITIZENSHIP	CITY San Carlos	STATE OR FOREIGN COUNTRY California	COUNTRY OF CITIZENSHIP Malaysia	
	POST OFFICE ADDRESS	STREET 730 Chestnut Street	CITY San Carlos	STATE OR COUNTRY California	ZIP CODE 94070
	SIGNATURE OF INVENTOR 202 			DATE 30 Aug 02	
2 0 3	FULL NAME OF INVENTOR	LAST NAME LI	FIRST NAME Shengqiang	MIDDLE NAME	
	RESIDENCE & CITIZENSHIP	CITY Los Altos	STATE OR FOREIGN COUNTRY California	COUNTRY OF CITIZENSHIP People's Republic of China	
	POST OFFICE ADDRESS	STREET 718 Terrace Court	CITY Los Altos	STATE OR COUNTRY California	ZIP CODE 94024
	SIGNATURE OF INVENTOR 203			DATE	
2 0 4	FULL NAME OF INVENTOR	LAST NAME BRYANT	FIRST NAME Martin	MIDDLE NAME	
	RESIDENCE & CITIZENSHIP	CITY Carlisle	STATE OR FOREIGN COUNTRY Massachusetts	COUNTRY OF CITIZENSHIP United States of America	
	POST OFFICE ADDRESS	STREET 65 Hickory Lane	CITY Carlisle	STATE OR COUNTRY Massachusetts	ZIP CODE 01741
	SIGNATURE OF INVENTOR 204			DATE	
2 0 5	FULL NAME OF INVENTOR	LAST NAME CLARKE	FIRST NAME David	MIDDLE NAME Kirkwood	
	RESIDENCE & CITIZENSHIP	CITY Chester	STATE OR FOREIGN COUNTRY New York	COUNTRY OF CITIZENSHIP United Kingdom/United States of America	
	POST OFFICE ADDRESS	STREET 30 Whispering Hills	CITY Chester	STATE OR COUNTRY New York	ZIP CODE 10918
	SIGNATURE OF INVENTOR 205			DATE	

2 0 6	FULL NAME OF INVENTOR	LAST NAME PALESE	FIRST NAME Peter	MIDDLE NAME	
	RESIDENCE & CITIZENSHIP	CITY Leonida	STATE OR FOREIGN COUNTRY New Jersey	COUNTRY OF CITIZENSHIP United States of America	
	POST OFFICE ADDRESS	STREET 414 Highwood Avenue	CITY Leonida	STATE OR COUNTRY New Jersey	ZIP CODE 07065
	SIGNATURE OF INVENTOR 203			DATE	



DECLARATION FOR NON-PROVISIONAL PATENT APPLICATION*

As a below named inventor, I hereby declare that:

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RECOMBINANT RSV EXPRESSION SYSTEMS AND VACCINES

and for which a patent application:

- ☐ is attached hereto and includes amendment(s) filed on (if applicable)
☒ was filed in the United States on September 25, 1998 as Application No. 09/161,122 (for declaration not accompanying application)
with amendment(s) filed on even date herewith (if applicable)
☐ was filed as PCT international Application No. on and was amended under PCT Article 19 on (if applicable)

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APPLICATION NUMBER	COUNTRY	DATE OF FILING (day, month, year)	PRIORITY CLAIMED
			YES <input type="checkbox"/> NO <input type="checkbox"/>
			YES <input type="checkbox"/> NO <input type="checkbox"/>
			YES <input type="checkbox"/> NO <input type="checkbox"/>

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PROVISIONAL APPLICATION NUMBER	FILING DATE
60/060,153	September 26, 1997
60/084,133	May 1, 1998
60/089,207	June 12, 1998

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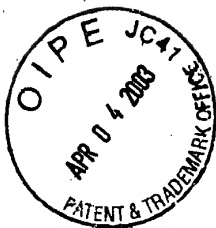
NON-PROVISIONAL APPLICATION SERIAL NO.	FILING DATE	STATUS		
		PATENTED	PENDING	ABANDONED
08/316,439	September 30, 1994	✓		

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2 0 1	FULL NAME OF INVENTOR	LAST NAME JIN	FIRST NAME Hong	MIDDLE NAME	
	RESIDENCE & CITIZENSHIP	CITY Cupertino	STATE OR FOREIGN COUNTRY California	COUNTRY OF CITIZENSHIP People's Republic of China	
	POST OFFICE ADDRESS	STREET 22385 Santa Paula Avenue	CITY Cupertino	STATE OR COUNTRY California	ZIP CODE 95014
	SIGNATURE OF INVENTOR 201			DATE	
2 0 2	FULL NAME OF INVENTOR	LAST NAME TANG	FIRST NAME Roderick	MIDDLE NAME	
	RESIDENCE & CITIZENSHIP	CITY San Carlos	STATE OR FOREIGN COUNTRY California	COUNTRY OF CITIZENSHIP Malaysia	
	POST OFFICE ADDRESS	STREET 730 Chestnut Street	CITY San Carlos	STATE OR COUNTRY California	ZIP CODE 94070
	SIGNATURE OF INVENTOR 202			DATE	
2 0 3	FULL NAME OF INVENTOR	LAST NAME LI	FIRST NAME Shengqiang	MIDDLE NAME	
	RESIDENCE & CITIZENSHIP	CITY Los Altos	STATE OR FOREIGN COUNTRY California	COUNTRY OF CITIZENSHIP People's Republic of China	
	POST OFFICE ADDRESS	STREET 718 Terrace Court	CITY Los Altos	STATE OR COUNTRY California	ZIP CODE 94024
	SIGNATURE OF INVENTOR 203 			DATE 8/29/2002	
2 0 4	FULL NAME OF INVENTOR	LAST NAME BRYANT	FIRST NAME Martin	MIDDLE NAME	
	RESIDENCE & CITIZENSHIP	CITY Carlisle	STATE OR FOREIGN COUNTRY Massachusetts	COUNTRY OF CITIZENSHIP United States of America	
	POST OFFICE ADDRESS	STREET 65 Hickory Lane	CITY Carlisle	STATE OR COUNTRY Massachusetts	ZIP CODE 01741
	SIGNATURE OF INVENTOR 204			DATE	
2 0 5	FULL NAME OF INVENTOR	LAST NAME CLARKE	FIRST NAME David	MIDDLE NAME Kirkwood	
	RESIDENCE & CITIZENSHIP	CITY Chester	STATE OR FOREIGN COUNTRY New York	COUNTRY OF CITIZENSHIP United Kingdom/United States of America	
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	SIGNATURE OF INVENTOR 205			DATE	

2 0 6	FULL NAME OF INVENTOR	LAST NAME PALESE	FIRST NAME Peter	MIDDLE NAME	
	RESIDENCE & CITIZENSHIP	CITY Leonida	STATE OR FOREIGN COUNTRY New Jersey	COUNTRY OF CITIZENSHIP United States of America	
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RECOMBINANT RSV EXPRESSION SYSTEMS AND VACCINES

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	SIGNATURE OF INVENTOR 202			DATE	
2 0 3	FULL NAME OF INVENTOR	LAST NAME Li	FIRST NAME Shengiang	MIDDLE NAME	
	RESIDENCE & CITIZENSHIP	CITY Palo Alto	STATE OR FOREIGN COUNTRY California	COUNTRY OF CITIZENSHIP People's Republic of China	
	POST OFFICE ADDRESS	STREET 4290 Wilkie Way	CITY Palo Alto	STATE OR COUNTRY California	ZIP CODE 94306
	SIGNATURE OF INVENTOR 203			DATE	
2 0 4	FULL NAME OF INVENTOR	LAST NAME Bryant	FIRST NAME Martin	MIDDLE NAME	
	RESIDENCE & CITIZENSHIP	CITY Carlisle	STATE OR FOREIGN COUNTRY Massachusetts	COUNTRY OF CITIZENSHIP United States of America	
	POST OFFICE ADDRESS	STREET 65 Hickory Lane	CITY Carlisle	STATE OR COUNTRY Massachusetts	ZIP CODE 01741
	SIGNATURE OF INVENTOR 204 			DATE 12 Dec 2001	
2 0 5	FULL NAME OF INVENTOR	LAST NAME Palese	FIRST NAME Peter	MIDDLE NAME	
	RESIDENCE & CITIZENSHIP	CITY Leonia	STATE OR FOREIGN COUNTRY New Jersey	COUNTRY OF CITIZENSHIP United States of America	
	POST OFFICE ADDRESS	STREET 414 Highwood Avenue	CITY Leonia	STATE OR COUNTRY New Jersey	ZIP CODE 07605
	SIGNATURE OF INVENTOR 205			DATE	

2 0 6	FULL NAME OF INVENTOR	LAST NAME Clarke	FIRST NAME David	MIDDLE NAME Kirkwood	
	RESIDENCE & CITIZENSHIP	CITY Chester	STATE OR FOREIGN COUNTRY New York	COUNTRY OF CITIZENSHIP United Kingdom/ United States	
	POST OFFICE ADDRESS	STREET 30 Whispering Hills	CITY Chester	STATE OR COUNTRY New York	ZIP CODE 10918
	SIGNATURE OF INVENTOR 205			DATE	

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60/089,207	June 12, 1998

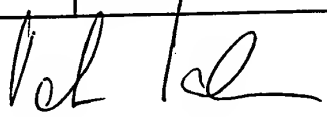
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	RESIDENCE & CITIZENSHIP	CITY Cupertino	STATE OR FOREIGN COUNTRY California	COUNTRY OF CITIZENSHIP People's Republic of China	
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	POST OFFICE ADDRESS	STREET 730 Chestnut Street	CITY San Carlos	STATE OR COUNTRY California	ZIP CODE 94070
	SIGNATURE OF INVENTOR 202			DATE	
203	FULL NAME OF INVENTOR	LAST NAME LI	FIRST NAME Shengqiang	MIDDLE NAME	
	RESIDENCE & CITIZENSHIP	CITY Los Altos	STATE OR FOREIGN COUNTRY California	COUNTRY OF CITIZENSHIP People's Republic of China	
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204	FULL NAME OF INVENTOR	LAST NAME BRYANT	FIRST NAME Martin	MIDDLE NAME	
	RESIDENCE & CITIZENSHIP	CITY Carlisle	STATE OR FOREIGN COUNTRY Massachusetts	COUNTRY OF CITIZENSHIP United States of America	
	POST OFFICE ADDRESS	STREET 65 Hickory Lane	CITY Carlisle	STATE OR COUNTRY Massachusetts	ZIP CODE 01741
	SIGNATURE OF INVENTOR 204			DATE	
205	FULL NAME OF INVENTOR	LAST NAME CLARKE	FIRST NAME David	MIDDLE NAME Kirkwood	
	RESIDENCE & CITIZENSHIP	CITY Chester	STATE OR FOREIGN COUNTRY New York	COUNTRY OF CITIZENSHIP United Kingdom/United States of America	
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	RESIDENCE & CITIZENSHIP	CITY Leonida	STATE OR FOREIGN COUNTRY New Jersey	COUNTRY OF CITIZENSHIP United States of America	
	POST OFFICE ADDRESS	STREET 414 Highwood Avenue	CITY Leonida	STATE OR COUNTRY New Jersey	ZIP CODE 07065
	SIGNATURE OF INVENTOR 203 			DATE 8/29/02	



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	RESIDENCE & CITIZENSHIP	CITY Palo Alto	STATE OR FOREIGN COUNTRY California	COUNTRY OF CITIZENSHIP People's Republic of China	
	POST OFFICE ADDRESS	STREET 4290 Wilkie Way	CITY Palo Alto	STATE OR COUNTRY California	ZIP CODE 94306
	SIGNATURE OF INVENTOR 203			DATE	
204	FULL NAME OF INVENTOR	LAST NAME Bryant	FIRST NAME Martin	MIDDLE NAME	
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	SIGNATURE OF INVENTOR 205 <i>David K Clarke</i>			DATE 12-14-01	



Application of: JIN et al.
Serial No.: 09/161,122
Filed: September 25, 1998
For: RECOMBINANT RSV EXPRESSION
SYSTEMS AND VACCINES
Group Art Unit: 1642
Attorney Docket No.: 7682-045-999

Floppy Disk/CD Mailer

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